

Special Issue

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KALEIDO **SCOPE**

STANDING CONFERENCE OF PUBLIC ENTERPRISES

START UP

**Synergizing Initiatives of
CPSEs & Government Agencies
on STARTUP India**



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Contents

Message by Hon'ble Minister of Petroleum..... and Natural Gas and Minister of Skill Development and Entrepreneurship	05
Message by Hon'ble Minister of State for..... Skill Development & Entrepreneurship	06
Chairman's Desk.....	07

Articles

Startup India: A New Face of Indian Economy..... by <i>Dr. U. D. Choubey</i>	09
Startup India by <i>Invest India</i>	13
HPCL Start-up India Program – Empowering Start-ups for Growth by <i>M. K. Surana</i>	16
Emerging Indian Startup Landscape and Contribution of NRDC in Promoting Startup India Initiative by <i>Dr. H. Purushotham</i>	18
iDEATION - Startup Initiative of Numaligarh Refinery Limited by <i>D. Rajkumar</i>	26
Role played by Bharat Electronics Ltd in Promoting Start Up India Initiatives by <i>Vasant S. Sheno</i>	29
Corporate Connect with Start-ups..... by <i>Anil Khaitan</i>	31
Start-Ups and the Indian Economy..... by <i>Prof. (Dr.) Aman Agarwal & Prof. (Dr.) Yamini Agarwal</i>	33
2018: A Landmark Year for Indian Tech Startups \$11 Bn Funding..... 743 Deals. 11 New Indian Unicorns by <i>Pooja Sareen</i>	40
The Youth of India should not be looking for Jobs, but creating them by <i>Aniket Baheti</i>	42
Are you Building a Business or are you stuck in the trap of..... Self-Employment? by <i>Rajiv Talreja</i>	44
Start-up Initiative in GAIL by <i>Manoj Jain</i>	46

Contents

SCOPE NEWS

SCOPE and PSEs Pay Homage to Mahatma Gandhi; Organizes Lecture on Mahatma Gandhi and Transformational Leadership 48

SCOPE organizes program on Enhancing Managerial Effectiveness... 49

PSE NEWS

PSE News55 - 86



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धर्मेश्वर प्रधान
Dharmendra Pradhan



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मंत्री
पेट्रोलियम एवं प्राकृतिक गैस ;
कौशल विकास एवं उद्यमशीलता मंत्रालय
भारत सरकार, नई दिल्ली

Minister
Petroleum & Natural Gas ;
Skill Development & Entrepreneurship
Government of India
New Delhi

Dated: 08.02.2019



MESSAGE

I am pleased to note that the Standing Conference of Public Enterprises (SCOPE) is taking this very important step of organising a two-day conclave to synergise different initiatives aimed at championing the cause of start-ups in India through a platform to boost the spirit of enterprise.

Entrepreneurship is blooming in India. Our unique market has generated entrepreneurs from all sections of society. Promoting entrepreneurship is key to the country's growth. Towards this, our Government has come up with several initiatives like Stand-Up India, Start-Up India, Make in India, Mudra Yojana etc.

As a key Ministry enabling entrepreneurship and skill development, it is our avowed intent to facilitate further growth of a start-up ecosystem, that creates opportunities for the country's burgeoning talent pool, in rural and urban India.

I congratulate SCOPE for this initiative, and I wish the conclave all success.


(Dharmendra Pradhan)



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Message

I am happy to learn that Standing Conference of Public Sector Enterprises (SCOPE) is organising a two day Conclave on "Synergizing Initiatives of CPSEs, Government Agencies and Industry Champions of Start-ups".

The 'Start up India' program was introduced by the Government of India to steer sustainable economic growth and empower industry through innovations. As the Government has declared 2010-20 the 'Decade of Innovation' to unleash the creativity of its citizens, the role of the 'Start-up India' initiative has increased manifold.

India is a country with a demographic advantage and if it can utilise the entrepreneurial spirit and ideation of its youth, no one can stop India from becoming the 'Start up Capital' of the world.

Government's attempt in creating a Start up ecosystem has been divided across simplification and Handholding, Funding Support and Incentives and Industry-Academia Partnership and Incubation. Public Sector Enterprises (PSEs) have been playing a distinct role in providing impetus to the Start-up ecosystem in the country.

I wish SCOPE success in its endeavour and hope that programs like these provide an amalgamation of initiatives taken, lessons learnt and way forward to its participating members.


(ANANTKUMAR HEGDE)

CHAIRMAN'S DESK



At the outset SCOPE congratulates the government for an inclusive Union Budget 2019-20 which addresses the needs of every strata of the society. With a slew of measures to address corruption, economic defaulters and to ease tax burden on the middle class, this budget in its truest sense is the people's budget. The budget also showed the future model of India that would be self sufficient, environment friendly and would be an epitome of clean and green nation.

India houses nearly 6.5 Lakh villages with 70 per cent of the country's population residing in them. Even after 73 years of Independence, agriculture still is a major contributor in the nation's GDP. Various measures were taken in the current budget to streamline the agriculture sector of the nation whether it was providing income support to the farmers or protecting them during natural calamities, this year's budget addressed the problems of the farmers.

The current budget also addressed the health sector which is another crucial aspect for a country as huge as India and with the launch of the world's largest healthcare programme - Ayushman Bharat by Hon'ble Prime Minister Shri Narendra Modi, nearly 50 crore people will receive medical treatment. On the whole the budget has laid the roadmap for making India strong and self-reliant.

The government is giving emphasis on creating a culture of entrepreneurship in the country to encourage youths to become job creators rather than job seekers. In line with government's vision, SCOPE is organizing a two day conclave on Start India which again is a game changing mission for

the nation. The two day conclave would see various stakeholders of the startup ecosystem viz. Startups, Mentors, Investors, Incubators, Accelerators and Government Bodies come on the same platform to deliberate on various dimensions of Startup ecosystem. Since its launch in January 2016, Startup India program has been able to make a mark for itself. India has become the 2nd largest startup ecosystem of the world. In the last one decade i.e. 2008 to 2018, numbers of startups have registered seven times increase from 7000 in 2008 to 49,000.

In this era of digitalization, innovation is the key for success and new innovations are challenging the regular, orthodox business models. Therefore, any organization that is ready to adapt and innovate will ensure its sustainability. Startup India program would not only empower the youth of the country but also will prove to be vital for the nation's economy. Public Sector Enterprises (PSEs) have started Startup Funds to support and nurture new ideas. Many PSEs are also committed to skill youths of this nation and impart entrepreneurial

training to them to make them self-reliant and self-sufficient. I hope this program will be a learning experience for all the participants.

SCOPE also recently conducted a program on Enhancing Managerial Effectiveness. It was widely agreed upon that a manager needs to have a positive attitude and Human Relations Management and Soft Skills can help them in achieving the ultimate goal.

SCOPE will keep on organizing such interesting programs in coming future for PSEs. India is poised to become a \$5 trillion economy by 2025 and aspire to become a \$10 trillion economy in the next eight years. We hope that every Indian reaps its benefit and PSEs become an anchor for the nation.



Ved Prakash
Chairman, SCOPE



Dr. U. D. Choubey
Director General, SCOPE

Startup India: A New Face of Indian Economy



Indian Economy had had few important milestones in past few decades. While 1990s was the time of liberalization, 2000s was the advent of Indian IT Industry in the world, the current decade could be dedicated to the disrupters or startups.

In the current era, the world belongs to the disrupters that are challenging the status quo of the established entities. The world's largest taxi company (Uber) doesn't own a car, the world's largest retail (Amazon) has no physical store, the world's biggest chain of hotels/accommodations (Airbnb) does not own a hotel, largest media platform (Facebook) does not create any content and the list goes on and on.

The technological advancements in recent decades have resulted in the making of giant meta-startups like Alphabet (Google parent

company), Apple, Facebook, Amazon and Microsoft. The networth of these five companies put together is 3.5 trillion dollars which places them at the fifth position in the world economy, only behind USA, China, Japan and Germany. India too has its own meta startups or called unicorns- Zomato & Swiggy (Food delivery startups), Policy Bazaar (Online platform to compare insurance policies), Paytm Mall (Digital payment platform), Oyo (Indian version of Airbnb), Ola Cabs (Indian version of Uber) etc. This is a manifestation of the advent of new technologies, innovations creating market value for their product and enhancing their country's economic prowess in the process.

Startup: Definition & Provisions

Startup as a term might be new,

but as a concept Indians have been entrepreneurial since the ancient Indian civilization. Ancient and Medieval India had well developed industries and commerce and there was high demand of Indian commodities in world market which attracted the European trading companies.

India has a huge demographic advantage over the world with its 50% population below the age of 25 years and 65% population below the age of 35 years. It is proposed that by 2020, India is going to be youngest nation in the world. All this might go in vain, if our young demography does not get ample support. Skilling and making them ready for the future should be at the top priority list.

Therefore, Indian Government is making skill development a priority. A step ahead of this process is start-up India which is based on the motto of transforming youth



into job-givers rather than job-seekers. The Start-up India initiative was announced by the Prime Minister on 15th August, 2015 which was formally launched on 16th of January, 2016. The new world seeks innovation and the one at the top would be the one with knowledge. The Start-up India initiative has the goal to promote innovation, generate employment and restrict the brain-drain to the western countries. Department for Promotion of Industry and Internal Trade (DPIIT) defines Startups as any entity:

- Incorporated as either a Private Limited Company or a Registered Partnership Firm or a Limited Liability Partnership
- Upto a period of seven years from the date of incorporation/registration or upto ten years in case of Startups in Biotechnology sector
- With an annual turnover not exceeding Rs. 25 crore for any of the financial years since incorporation/registration
- Entity should not have been formed by splitting up or reconstruction a business already in existence
- Working towards innovation,

development or improvement of products or processes or services, or if it is a scalable business model with a high potential of employment generation or wealth creation

Various steps have been taken to promote the Startup India initiative, namely,

- Creation of a 'Fund of Funds for Startups (FFS)' at Small Industries Development Bank of India (SIDBI) with a corpus of Rs. 10,000 crore
- Credit Guarantee Fund for Startups with a corpus of Rs. 500 cr
- Relaxed Norms in Public Procurement for Startups
- Tax Incentives
- Legal Support and Fast-tracking Patent Examination at Lower Costs
- Self-Certification based Compliance Regime
- Setting up Incubators (Atal Incubation Centres)
- Setting up of Startup Centres & Technology Business Incubators (TBIs)
- Research Parks
- Protection of Intellectual Property (IP)
- Easy winding up of company

- Mobile App & Startup India Portal
- Startup India Hub
- Launching of innovation focused programs for students
- State/ Union Territories (UT) Startup Missions

The government has also tripled its corpus of Credit Guarantee Fund Scheme for Micro and Small Enterprises to Rs 8,000 crore and about 18 lakh new entrepreneurs were funded through various initiatives by the MSME ministry in the last four years. For micro-enterprises, it is providing Rs 25 lakh up to Rs 2 crore without collateral. The Indian government is taking the guarantee and the government has also decided to raise its guarantee level of such loans to 75 percent, against the previous 50 percent, to help/facilitate smooth credit flow to MSMEs.

Similarly, through Pradhan Mantri Mudra Yojana (PMMY) collateral free loans by Banks, Non-Banking Financial Companies (NBFCs) and Micro Finance Institutions (MFIs) are being given to Small & Micro enterprises and also individuals in the non-agricultural sector to help them setup or expand their business activities which in turn would generate self employment. Under PMMY, the number of accounts/number of loans sanctioned during 2015-16 to 2017-18 were 12.27 crore, out of which 3.49 crore were new entrepreneurs. Four lakh crore have been given under PMMY. All these steps have resulted in making India one of the largest startup ecosystems of the world.

Women Entrepreneurs and Startup India

In a recently conducted research,

the average age of startup founders was found to be 28 years of which 9% of founders were women. When we talk about it in the whole Startup India scenario, this number falls short of generating a rainbow scenario for the entire startup spectrum.

According to Sixth Economic Census released by the Ministry of Statistics and Programme Implementation (MoSPE), out of the total entrepreneurship in India, women constitute 14% of the total entrepreneurship i.e. 8.05 million out of the total 58.5 million entrepreneurs.

The government is doing its bit to promote women empowerment. Like, the Government has introduced its Trade-related Entrepreneurship Assistance and Development (TREAD) scheme for women to provide preferential interest rates and credit guarantee schemes for women entrepreneurship. In the recent budget, Finance Minister proposed to provide 3 per cent tax benefit to the women owning Micro, Small and Medium Entrepreneurs (MSMEs). The women and child development ministry will also soon set up Women's Entrepreneurship Council for developing and helping women entrepreneurs. Notably, NITI Aayog too had similar platform for women entrepreneurs.

Apart from the government's efforts, we also need a change of societal mindset toward women. While it is a known fact that increase in women participation in the economy would in turn result in increase in the GDP, the process of bringing women entrepreneurs in the main stream economy has been slow.

It is high time that we promote

India has a huge demographic advantage over the world with its 50% population below the age of 25 years and 65% population below the age of 35 years. It is proposed that by 2020, India is going to be youngest nation in the world. All this might go in vain, if our young demography does not get ample support. Skilling and making them ready for the future should be at the top priority list. Therefore, Indian Government is making skill development a priority.

women entrepreneurship at full throttle as it would not only bring a sense of equality in our society but act as a multiplier effect for the entire nation's socio-economic development.

Public Sector Enterprises & Startups

Recently, our Prime Minister posed five questions for Public Sector Enterprises (PSEs) that could help India attain the vision of 2022. These were-

- Maximizing the geo-strategic reach of PSEs
- Minimizing country's import bill
- Ways to integrate innovation and research in PSEs
- Optimal utilization of CSR Fund

- New development model for India by Indian PSEs

An interesting perspective would be to tackle these challenges by nurturing and funding startups that help PSEs in developing a symbiotic relation with them.

Looking at the current scenario of Startups and PSEs, ten PSEs under Ministry of Petroleum & Natural Gas have come together to create start up fund of Rs 320 crore. HPCL has started 32 start ups pertaining to AI/Machine Learning based solutions in business areas development of Augmented Reality (AR), Virtual Reality based training modules, development of Solar Stove and Safety Devices for LPS Store, bio mass to energy solutions, drove inspections of refinery equipment and other assets, electric mentality, renewable, women hygiene solutions. These will help HPCL to generate superior customer experience, skill enhancement, reduction in carbon foot print, promote safety and security at various customer touch points as well as at installations including refineries, pipelines, bottling plants, storage locations etc.

BEL and HAL have formed a Defence Innovation organization (DIO) to help in their R&D of new technologies, to find suitable market and further commercialization through defence establishment. BEL has empanelled 237 industries out of which 110 are MSMEs for R&D prototyping, pilot implementation, marketing and items earmarked for procurement. Airports Authority of India (AAI) has initiated the AAI Startup Initiative - Innovate for Airports program. The program provides startups an opportunity



to work with AAI towards customizing and developing airport relevant innovations as well as pilot testing them at airports across the country. The selected startups will also be provided with funding and mentorship by the organization.

Apart from these initiatives, PSEs through its CSR activities and Skill Building programs, have been skilling youths across the nation to make them job ready and also to build entrepreneurial skills in them.

Startup India: What the future beholds?

Data Analytics and Artificial Intelligence is the next big thing in the Indian Startup Ecosystem. Data analytics has found its place in the mainstream economy and has paved into the two most important & largest sectors i.e. Finance and Banking.

As per an analysis of Business Line by The Hindu, the global AI market would be as big as \$ 15.6 trillion by 2030, of which India could get \$3 trillion. Similarly when it comes to Internet of Things, as per a report by Nasscom, the IoT market in India is poised to reach USD 15 billion by 2020, accounting for nearly 5 per cent of the total global market

The investment in Indian startups increased 110% annually from \$2 Billion in the first three quarters of the year 2017 to \$4.2 Billion during the same period in 2018. Although the Indian Startup ecosystem is moving at a tremendous pace, there are few concerns that need to be addressed. Last year, 277 start-ups shut shop as per data sourced from venture capital research firm Tracxn. A recent study, "Entrepreneurial India," by the IBM Institute for Business Value and Oxford Economics found that 90% of Indian startups fail within the first five years.

The most common reason given for the failure is stated as the lack of innovation — 77% of venture capitalists surveyed believe that Indian startups lack new technologies or unique business models. We also fall way behind when it comes to filing Intellectual Property (IP). In 2017, we filed around forty seven thousand IPs which was far less than Europe, USA and China (Top three in ascending order). India currently ranks 57th on the Global Innovation Index (GII) list. On one hand we need to innovate more and on the other hand the existing startup ecosystem should ponder upon following points:

- **Long term vision:** Do not

sacrifice long term goals to have short term benefits

- **Risk Appetite:** Not be complacent with the product, the risk taking ability keeping in view the company's ability to take the shock in case of failure should be kept in mind

- **Be pioneers in AI technology**

- **Don't be fat, be fit:** Do not recruit unnecessarily only because you have the funds- be clear when it comes to the vision & mission of the organization and there is a 100% resource utilization; Use the funds judiciously

- **Be able to demonstrate scale to investors-** Majority of the start-ups after the initial round of funding fail to generate the second round of investment because of the lack of the ability to demonstrate their vision to the investors. For this to happen, startups should look for strengthening their tech support.

The current environment is in the favour of Start-ups and the government support to it is commendable, raising funds are not difficult. Therefore, it becomes pertinent for the start-up ecosystem and the aspiring entrepreneurs to use the government support and act responsibly, innovatively and make the most of it! The soul of the Indian Economy lies in such initiatives that promote- self dependency, self-reliance and self-awakening which in turn would not only facelift the country, but also become a symbol of empowerment for the entire world. ■

Startup India

- Invest India

"India has dreamt the biggest dreams and set the highest of targets for her future. Think about it - India has more than 23,000 digital transactions per minute. 152 internet users are added per minute. More than 117 patents are being filed per day and India today is ranked #1 globally in data consumption. More than three startups are being added everyday.

Invest India continues to be the engine catalyzing the country's investment ecosystem. Driven by a committed team of young experts, the Startup India Hub at Invest India is a virtual incubator and the only one of its kind across the globe. It is the one-stop shop for all stakeholders in the ecosystem and hosts mentors, investors, startups, corporations, government bodies and incubators." - Deepak Bagla, MD & CEO, Invest India

India is as varied and diverse in its investment opportunities as it is in its culture and geography. India, though a more unified market today than ever before, is represented by its 29 States and 7 Union Territories, each unique in its own sectoral capabilities, infrastructure, demography, industrial policy and investment incentives, and linkages with international markets. Complementing this are Central level industrial and foreign investment policies and sectoral fiscal support schemes.

Facilitating foreign investors towards an understanding of this diverse and seemingly complex investment landscape is indispensable. This has led to the formation of Invest India.

Invest India is the national investment promotion and facilitation agency of India, that focuses on sector-specific investor targeting and development of new partnerships to enable sustainable investments in India. It is a non-profit venture under the Department for Promotion of Industry & Internal Trade (DPIIT), Ministry of Commerce and Industry, Government of India. Invest India, the startup of the Government of India, is now a 120 member team with an average age of 29 years.

India's startup ecosystem is at its peak right now. To build a strong ecosystem for innovation and entrepreneurship in the country, our Honorable Prime Minister, Shri Narendra Modi,

launched a 19-point Action Plan on 16 January 2016. Startup India, the flagship initiative of the Government of India under Invest India, drives the 19-point Action Plan that offers specific benefits for startups under the pillars of 'Funding Support and Incentives', 'Simplification and Handholding', and 'Industry-Academia Partnership and Incubation'.

The Startup India hosted under Invest India became operational on 1 April 2016. It serves as a single point of contact for the entire startup ecosystem, enables exchange of knowledge and access to funding. The Startup India team provides mass facilitation in the form of a dedicated helpline, email and twitter queries and has



till date, responded to 1,24,293 queries. Additionally, the team also offers bespoke and full-fledged facilitation to select startups in the form of business plan, strategic & financial advisory, government & policy advocacy and assists startups with coordinating relevant stakeholder meetings in India.

As of 31 January 2019, 15,646 startups across India have been recognized from 494 districts, 29 states and 6 Union Territories. 55% of these recognized startups come from Tier 1 cities, 27% from Tier 2 cities and the remaining 18% from Tier 3 cities. Further, 45% of recognized Startups have reported at least one or more female director. The current number of recognized startups in India makes it the second largest startup ecosystem globally, and also the fastest growing one, in terms of number of startups added daily. We have also been ranked as the third largest unicorn community in the world today, with 19 unicorns.

With the endeavour to reduce knowledge asymmetry and create a conducive environment for startups to flourish in an engaging ecosystem - The Startup

India Online Portal –was created by the team to provide a unified platform for all the stakeholders of the startup ecosystem. The Online portal connects various stakeholders and drives synergy amongst them to create value propositions for aspiring and existing entrepreneurs. These value propositions range from providing connects, knowledge exchange, latest news, policy updates to additional offerings to the startups in the form of corporate programs, international events, pro-bono services and government programs for startups. Built on a gamification model, it is a dynamic and interactive platform that enables:

- Information discovery on important Government schemes and grants for startups
- Entrepreneurial Learning and Development through curated learning programs
- Connect with enablers like mentors, funds, investors, incubators & accelerators
- Access to startup tools & templates and lots more

Today, this portal has over 300K users including, Incubators, Accelerators, Investors, Mentors

and Govt Departments. All the activities, initiatives, programs and resources can be accessed through this one stop shop for all the stakeholders of the startup ecosystem at www.startupindia.gov.in. To support the grand vision, a fund of funds of INR 10,000 Cr. (\$1.4 Bn) was also launched to empower domestic Venture Capital Funds (VCFs) to invest into Indian startups. Small Industries Development Bank of India (SIDBI) acts as the Fund Manager to disburse this fund corpus by 2025. As of 11th Jan 2019, the government has sanctioned INR 2,200 Cr. (\$309 Mn) of the target corpus to SIDBI, which has further committed INR 1,750 Cr (\$246 Mn) to 35 Indian VCs. The selected VCFs are expected to raise an overall corpus of Rs 17,963 Cr (\$2.5 Bn). Therefore, the Fund of Funds for Startups has a multiple of 10x in catalyzing funding for Startups. As of date, one hundred and seventy-nine (179) startups have received a cumulative funding of INR 993.67 Cr (\$140 Mn) under this initiative.

To leverage the power of entrepreneurship in the tier 2 and tier 3 cities of the nation a unique program was curated called the 'Startup India Yatra.' This program has been designed to spread awareness about entrepreneurship and incentivize startups in the rural and nonmetropolitan areas. So far, the yatra has been conducted in over 15 states, 176 districts and has impacted over 75,000 entrepreneurs and innovators by providing them mentorship, funding and incubation opportunities.

Startup India also curated a free of cost e-learning program to encourage startups learn about the

fundamentals of entrepreneurship. This learning and development program is available on web and mobile in English and Hindi through which entrepreneurs understand the very basics of startups and on the completion of the course, they are able to create a business plan based on the information they input in the system. Out of over 2,35,000 users who have enrolled for the e-learning course, 12,716 aspirants have completed the Learning Program and built business plans. This course not only acts as a guide, but also helps provide a tangible outcome.

To further strengthen the ecosystem and take the startup revolution to every district of the country, a collaborative effort between the Central, State, and UT governments is required. As of today, over 25 states have a dedicated startup policy, majority of them were enabled by Startup India. We have worked actively with various state governments to draft their startup state policy and operational guidelines, provided support for web portal development, onboarding team, creating network of mentors and investors among others. The State Ranking Framework was one initiative introduced by the Department for Promotion of Industry and Internal Trade (DPIIT) to encourage healthy competition within states and help States and Union Territories to take proactive steps towards supporting startups.

Recognizing the importance of working collaboratively in the era of globalization, efforts have been made to connect the Indian startup ecosystem with the global startup ecosystem, government bodies and large corporates. Many international



Facilitating foreign investors towards an understanding of this diverse and seemingly complex investment landscape is indispensable. This has led to the formation of Invest India. Invest India is the national investment promotion and facilitation agency of India, that focuses on sector-specific investor targeting and development of new partnerships to enable sustainable investments in India. It is a non-profit venture under the Department for Promotion of Industry & Internal Trade (DPIIT), Ministry of Commerce and Industry, Government of India.

collaborations, were materialised and launched as a part of this initiative to help the entrepreneurs learn from each others' best practices and benefit from what

countries can offer at an individual level. Some of the key partnerships being the India Israel Innovation Challenge, the India Singapore Innovation Bridge, the India Portugal Startup Hub, the India Sweden Startup Sambandh and the Indo-Dutch Startup Link. Multiple government and corporates are being materialised to help startups gain knowledge & mentorship from the industry experts, collaborate for market access programs, get exposure to the R&D and innovation labs and funding support. A few of the programs are Agriculture Grand Challenge, Integrate to Innovate, Data Innovation Bazaar and Amazon Launchpad.

Invest India is one of the best examples of effective Public-Private partnerships in the country, with its ownership residing with Central and State governments as well as apex private industry associations. At the heart of its success lies its people who operate in an extremely complex environment involving a multitude of domestic and international stakeholders, keeping investment facilitation and employment creation at the core of its objectives at all times. ■

HPCL Start-up India Program – Empowering Start-ups for Growth



Mr. M. K. Surana
CMD, HPCL

Start-up India a flagship initiative of the Government of India as launched by Hon'ble Prime Minister Shri Narendra Modi on 16th January 2016, is intended to build a strong eco-system for nurturing Innovation and Start-ups in the country that will drive sustainable economic growth and generate large scale employment opportunities.

In the Oil & Gas Sector, Hon'ble Cabinet Minister for Petroleum & Natural Gas and Skill Development & Entrepreneurship Shri Dharmendra Pradhan emphasized the need for fostering business partnership between the Start-ups and the CPSEs under Ministry of Petroleum & Natural Gas (MOP&NG) to set a new benchmark for growth and job creation in the energy sector. Subsequently, ten CPSEs under MOP&NG came together to create a Start-up fund of Rs.320 Crore including Rs.25 Crore fund set-up by HPCL for a period of three years. HPCL developed "HPCL Start-up India" program and has crossed many important milestones in the process of building its own Start-up eco-system by acting as a proactive Corporate Venture Capitalist.

To facilitate invitation of online applications in a structured format, HPCL launched Start-up web portal <http://startup.hpcl.co.in> in May 2017.

In addition to funding support to the Start-ups, management and marketing expertise is also made available to them, along with use of HPCL's infrastructure for establishing proof of concept. The above enables the Start-ups to take-off in quick time, and gain competitive and the first-mover advantage. HPCL also introduced the Start-ups to established professionals and domain experts, for mentorship and future growth. Speaking at the "Start-up Sangam" event organized by Ministry of Petroleum & Natural Gas on 25th October 2017 in New Delhi, Hon'ble Cabinet Minister for Petroleum & Natural Gas and Skill Development & Entrepreneurship, Shri Dharmendra Pradhan said that the Start-up India initiative will change the status of the youth of our country from job seeker to that of job provider as envisaged by Hon'ble Prime Minister Shri Narendra Modi. At the function, MoU were also exchanged with 4 Start-ups (Constems-AI, DiGas, Simulanis and UNesar) by HPCL's CMD,

Mr. M. K. Surana. Thereafter, HPCL has selected 37 Start-ups till January 2019. The selected Start-ups have projects pertaining to areas such as deployment of Artificial Intelligence (AI)/ Machine Learning (ML) based solutions in business areas, development of Augmented Reality (AR)/ Virtual Reality (VR) based training modules, development of solar stove and safety device for LPG stove, biomass to energy solutions, drone inspection of refinery equipment and other assets, electric mobility, renewables, woman hygiene solutions, etc. The technological solutions from these Start-ups would aid HPCL to provide superior customer experience, skill enhancement, reduction in carbon footprint and promote safety and security at various customer touch points, as well as at installations including refineries, pipelines, bottling plants, storage locations, etc.

Some of the Start-ups supported by HPCL are detailed below:

Constems-AI (Noida) is engaged for development of AI based image processing solution and analytics platform for identified deliverables pertaining to safety, security and operations in HPCL's Retail Outlets, Storage Locations



Constems-AI.



DiGas.



Simulanis.

and LPG Bottling Plants.

Tranzmeo IT Solutions (Kochi) is engaged with HPCL's Pipeline Division to establish a Proof of Concept (POC) of their innovative Pipeline Intrusion Detection System (PIDS), and thereafter developing a comprehensive solution / platform (using AI/ML) to integrate data from PIDS, LDS (Leak Detection System) and STS (Security Tracking System) and building an analytics and visualization layer on top of the solution on a scaled up basis.

DiGas (Chennai) is developing an Auto LPG Leak Detector and Arrester system, a mechanical device which will detect the LPG leakage from the LPG stove burner and will automatically shut-off the stove knob. Prototype has been successfully developed and integrated with a gas stove for field testing. **UNesar** (Vadodara) is developing a solar energy powered cooktop, which is as effective as a conventional LPG hotplate. The Start-up has already developed three functional prototypes which have been deployed for field trials in rural households.

Simulanis Solutions (Delhi/Noida) is engaged in the development of Augmented Reality and Virtual Reality (AR/VR) based

training modules, by which the effectiveness and impact of the training program is enhanced by creating an immersive learning experience *vis-a-vis* 2-D presentation contents presently in use.

Eco-Opus Agri Ventures (Aurangabad) is working towards reconstructing the biomass supply chain model so as to ensure timely supply of high quality biomass at the least cost to enterprises. The Start-up aims to achieve this by providing integrated agricultural services to the farmers covering the entire scope of farming operations i.e. pre-cultivation activities, cultivation and crop care activities, harvesting and primary processing of the grain and biomass.

Red Room Technology (Delhi) is focusing on developing products for female hygiene and comfort. The Start-up has developed a unique biodegradable and disposable product called, 'Sanfe' which gives women freedom to stand and urinate, thereby avoiding direct contact with the dirty toilet seats and preventing them from catching infections which is more prevalent in women.

ClairViz Systems (Mumbai) is working on providing cutting edge solutions for Digitization

of manufacturing industry. The Start-up has already rolled out an app based digital maintenance management solution in HPCL's Mumbai Refinery for monitoring of shift maintenance activities and will also be further working towards implementing a pilot on IOT based Real-Time Production Monitoring & Analysis System at one of HPCL's LPG bottling Plants.

"HPCL Start-up India" program, in addition to propelling the Start-ups, has also progressed on the other desirable outcome viz. generation of employment. For instance, Tranzmeo has doubled their team strength to 15 from 7 members, after commencement of engagement with HPCL. Similarly, Constems-AI's has grown to 14 from 4 members, Red Room workforce to 10 from 2 members and so on. HPCL is confident that the employment opportunities would increase manifold during scale-up and commercialization process of the solutions and products developed by the supported Start-ups.

In a nutshell, HPCL is an example of the significant positive impact made by "HPCL Start-up India" program across India in various sectors, and the program is now poised to go much higher. ■

Emerging Indian Startup Landscape and Contribution of NRDC in Promoting Startup India Initiative



Dr. H. Purushotham
Chairman & Managing
Director, NRDC

National Research Development Corporation (NRDC) an Enterprise of Dept. of Scientific & Industrial Research (DSIR) under the Ministry of Science & Technology has been playing a transforming role in building Indian Startup Eco-System by way of providing proof of concept tested technologies, providing financial assistance of prototype development, conducting field trials, for validation of the innovative products and services, protection of IPRs, market research reports, incubation space, mentoring, handholding and seed funding etc. In fact NRDC as rightly positioned as a One – Stop – Shop for Startups/Entrepreneurs as it provides all the major Support Services required by entrepreneur/ Startups to build innovative technology ventures.

Hon'ble Prime Minister Shri Narendra Modi launched the Startup India initiative on January 2016 with a mandate to promote and encourage young entrepreneurs of our country. He envisioned the aim of the initiative to transform India into a Startup nation, "a country of job creators instead of job seekers".

Globally, Startups are seen as nation builders as they create positive contribution to the nation's economy and create jobs. Startups are normally identified as a newly emerged, fast-growing business that aims to meet market

place need by developing viable business model around innovative product, service, process or a platform. With their success they also create a sense that indigenous innovations and technologies can bring fruitful economic benefits in the long run.

What is a Startup?

As per the current guidelines of DIPP, the Startup is an entity working towards innovation, development, deployment, and commercialization of new process, product or services driven by technology or intellectual property. Furthermore the

entity should be under 7 years old from the date of incorporation (10 years' for biotechnology startup), a legal entity in India the turnover of the Startup should not be more than Rs.25 crores for any of the financial years during the start-up period, scalable business model with high potential for employment generation or wealth creation. An entity formed by spitting up or reconstruction of an existing business shall not be considered as a startup.

Startup landscape in India

The startup landscape is growing

rapidly in our country. The startup landscape is presented based on the recently released two reports i.e.(i) NASSCOM – Zinnov Startup Eco-system 2018 (ii) States Startup Ranking 2018 by DIPP. According to NASSCOM – Zinnov report (2018) multiple indicators point that the Indian Startup Ecosystem is approaching escape velocity. India continues to be the 3rd largest startup ecosystem in the World with overall Startup base in Indian is 7500+, a growth of 12-15% from 2017. The number of new Startups added in 2018 is about to 1200+ compared to 1000+ in 2017. Out of the 7500+ Startups, 1200+ are in the area of advanced technology Startups / Enterprise Software Startups (Data Analytics , IOT, AI, AR,VR, Block chain), 900+ Fintech Startups, 800+ Marketplace Startups, 550+ Health Tech Startups, 400+ Ed. Tech Startups, 400+ Social Startups, 300+ Agri Tech startups, Data Analytics Startups continue to find growth across all Sectors.

The total number of Indian unicorns more than doubled (18 at present) with 8 Startups being added to the list – highest number in any year till date. The number of advance technology Startups increased by 50% from 2017, with Data Analytics, AI, and IOT witnessing the fastest adoption. Indian Startup ecosystem Continued to attract investor interest with almost \$ 4.2 billion of funding in 2018(Jan – Sept) demonstrating 108% growth over the same period in 2017. About 451 Startups were funded in 2018 compared to 529 Startups in 2017. Consumer focused Startups continue to garner highest Share of investment amount. There are about 210+ active Incubators/



Prof. M.S. Swaminathan releasing the product Pottassium Humate.

Accelerators supporting the Startups but 40,000 new direct jobs and 2.5 - 3 times of indirect jobs were created by the Startups. Out of these 210+ Incubators/Accelerators, 50+ each in Corporate/Private Sector, 95+ in academic institutions and 20+ in Govt. institutions. 70+ Mergers & Acquisition in H I 2018, compared to 60+ M & A deals in HI 2017 (15% growth) took place. Leveraging technology built Startups and their maturity level is the most Common reason for acquisition.

Entrepreneurs with Strong educational background, coupled with few years of professional experience with deeper understanding of business, better networks and skills have been traditionally successful in India. It is interesting to note that majority of the Startup founders in India are in the age group of 31-40 yrs (57%), 26-30 years (20%), <25 years (13%), >45 yrs (10%). The educational qualifications of Startup founders are; engineering graduates (35%), MBA (35%), MS/PhD(15%) others (15%). The gender distribution; Men 86% and Woman 14%. First Set of successful entrepreneur in

India is becoming Angle Investors and Serial entrepreneurs.

The Indian Startups ecosystem is becoming more global as there are 14+ active Government backed international Startups exchange missions. International Starups missions such as Israel, France, South Korea, UK are significantly contributing to Indian Startup ecosystems growth. Bangalore (25%) Delhi & NCR (21%), and Mumbai (14%) continue to remain as a primary Startup hubs in India. India has the highest member of unicorns Startups (18) after US (126) China (77) Average time to become unicorn in India is 5-7 years compared to 6-8 years in USA and 4-6 yrs in China. The Startup epicenter of the world is shifting towards Asia.

New and Innovative Business models are emerging in the Indian Startup ecosystem like Global Innovation, Rental Economy, B2C Subscription model, and on Demand models etc.

Some of the major Government startup policies have started to show on ground, the impact, such as Fund of Funds (Rs.10,000 crore fund to support innovation



Production facility for Pottassium Humate.

driven Startups at SIDBI), Atal Innovation Mission (Rs10cr grant for each Atal Incubation Centre) National Initiative for Development and Harnessing Innovations (NIDHI of DST), Tax Exemption Scheme for Startups by Ministry of Finance, TBI's/ Research Parks/Biotech Incubation (DBT, Govt. of India, Rs1cr each Incubator), Startup India Mission/ Action Plan, Invest India, etc. and Startup Schemes launched by oil PSUS like IOCL, ONGC, OIL, GAIL and HPCL etc. All these Schemes have created a great vibrancy in the Startup ecosystem and hundreds of Startups got the benefit from these Govt. policies and schemes and a critical mass of startups have been setup and they are able to influence the policy making. Now 20 States have Startup Policies/ Scheme in 2018 compared to 15 States in 2017.

Recently DIPP, Ministry of Commerce & Industry published a report on States Startup Ranking 2018. As per this report the Indian Startup Eco-system comprises of over 14,600+ startups, approximately 270 incubation and business acceleration

programmes, 200 global domestic VC firms supporting homegrown startups and a fast growing community of 231 angel investors and 8 angel networks.

The Startup India initiative has contributed significantly to the startup movement across the country and a surge in entrepreneurial activity has been observed since 2016. The table below shows the presence of startups in different States and UTs.

The growth of startups since the launch of Startup India initiative and the top areas / technology domains of the registered startups are given in Fig 1 and Fig 2.

India has startups working in industries ranging from Fintech to Food-tech and Robotics to Agritech. The startups registered with NASSCOM or DIPP are only indicative but may not be the actual number. The actual startups in the country may be much higher in reality. The startups who wish to get the incentives offered by NASSCOM and DIPP are only registered with them but there are many startups who have not registered either with NASSCOM or DIPP as

it is not mandatory by law. There is a need for standardizing the startups registration process to have the authentic statistics about number of startups in the country at any given time.

NRDC: A One-Stop-Shop for Startups

The mandate of NRDC is to promote, develop and commercialize technologies emanating from public funded R&D Organizations, Universities, Technical Institutes, Corporate, etc. NRDC offers its services in wide ranging S&T areas in improving the manufacturing base in India with innovative technologies and acts as an effective catalyst translating innovative research into market able industrial products and services. During its existence over 63 years NRDC has forged strong links with various R&D organisations in the country as well as from abroad and pursued the worthy cause of bringing inventions to fruition. NRDC is now recognized as a large repository of wide range of technologies spread over almost all areas of industries, viz. Agriculture & Agro Processing, Food, Chemicals including Pesticides, Drugs and Pharmaceuticals, Bio Technology, Metallurgy, Electronics and Instrumentation, Building Materials, Mechanical, Electrical and Electronics, etc. As on date it has signed about 5000 technology license agreements with entrepreneurs / startups in India and abroad, filed more than 1900 patents, awarded over 960 meritorious inventions and innovations. Fig 3 highlights the value added services provided by NRDC to the lab scale innovations so that the technologies are investments ready.

Startups in States/UTs

State	Startups	State	Startups
Maharashtra	2587	Assam	106
Karnataka	1973	Punjab	102
Delhi	1833	Jammu and Kashmir	63
Uttar Pradesh	1129	Goa	61
Telangana	748	Chandigarh	52
Gujarat	712	Himachal Pradesh	27
Haryana	710	Pondicherry	19
Tamil Nadu	709	Manipur	11
Kerala	461	Nagaland	7
West Bengal	417	Andaman and Nicobar Islands	4
Madhya Pradesh	384	Arunachal Pradesh	4
Rajasthan	371	Tripura	4
Andhra Pradesh	259	Dadra and Nagar Haveli	3
Orissa	251	Daman and Diu	2
Bihar	178	Meghalaya	2
Chhattisgarh	168	Mizoram	1
Jharkhand	116	Sikkim	1
Uttarakhand	108		

NRDC Contribution to Startup India Initiative

As shown in Fig 3 NRDC is a One-Stop-Shop for entrepreneurs who are willing to establish Startups.

Some of the major services / contributions made by NRDC in the recent past to Startup India and Make in India Initiatives are briefly presented below.

Transfer of Technologies to startups

For any entrepreneur, to start a Startup, to solve a problem needs a technology. The technology can come from the entrepreneur's own idea for which a proof of concept needs to be established, prototype to be made validated in the market to become IP protected, before it is taken up for commercialization or the entrepreneur can source the proof of concept tested technology from NRDC or any of the national R&D Labs/ Universities, but the entrepreneur may not be aware where the solution is available in the form of technology to buy. To facilitate providing technologies developed by national R&D laboratories /Universities / PSU's Govt. of India established National Research Development Corporation in the year 1953 as a one-stop-shop. NRDC compiles all the technologies /patents developed by various public funded R&D organizations, fill the gaps in the technology if any and market them in India and abroad for Commercial exploitation. By choosing technology from NRDC, the entrepreneur can save time, resources, and does not have to do research or re-invent the wheel again; thereby time to market would be much faster.

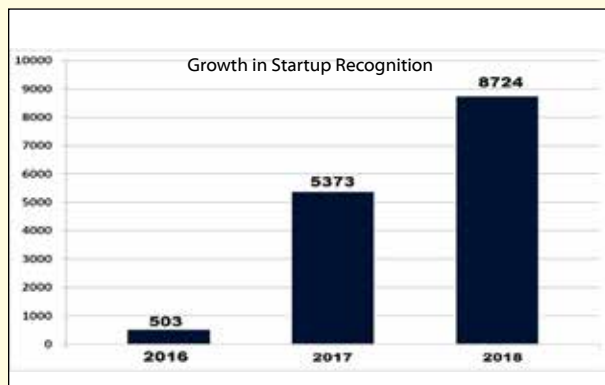


Fig 1

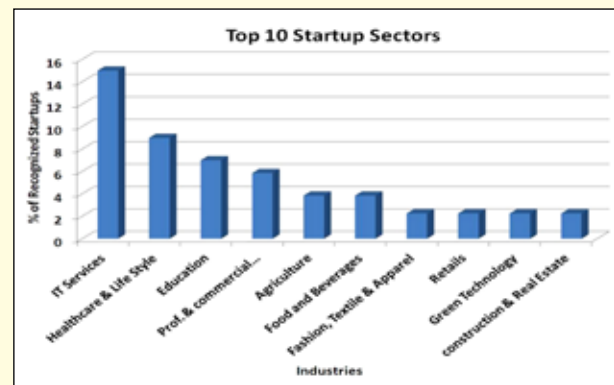


Fig 2



Signing of MoA between IOCL and NRDC for Implementation of IOCL Startup Scheme.

More over NRDC provides all the enabling support to the entrepreneurs until the Product /Service is launched in the market.

Unfortunately many of the entrepreneurs are not aware of NRDC services and schemes like many other Government Schemes.

NRDC has about 3000 innovative technologies in its databank, for which proof of concepts have already been tested and for many technologies even the patents are filed/ granted.

Interested entrepreneurs may visit NRDC to choose technology

of their choice from different domains. NRDC has technologies in all most all industry domains/sectors. So far NRDC has transferred technologies to about 5000 entrepreneurs/Startups in India and abroad. The technology Sourcing Institutions and the areas of technology transfer made to Startups/ entrepreneurs are given in Fig 4 and Fig 5.

**NRDC Licensed
Neyeli Lignite Corporation
(NLC) Developed
Technology to 9 Startups**
Neyveli Lignite Corporation

(NLC) a CPSE under Ministry of Coal has developed a technology/ technical know-how for production of potassium humate from Lignite for which an Indian patent was also obtained. Use of Potassium Humate a salt of humic acid in agriculture improves the quality of soil and soil characteristics resulting in increased crop yield and better quality of crop. Tamilnadu Agriculture University Coimbatore carried out field trials using the potassium humate product developed by NLC for about 4 years on different crops. Like rice, sugarcane, groundnut, pulses, cotton, tomato, onion, and tea etc. It has been proved that the Crop yield have increased from 10 to 30 % apart from reducing usage of chemical fertilizers, which adversely affect environment. The product is an import substitution. It has huge potential for use in agriculture and horticulture. NRDC provided many value-added services to the technology and transferred this technology to 9 Startups. Some Startups have already launched the product in the market. BIS has also brought out Indian standards for this product based on NRDC intervention and persuasion.

Another important technology is Hydrogel technology developed by Indian Agriculture Research Institute (IARI), ICAR institute was licensed to about 4 companies / startups. M/s Carborandum Universal has launched the product in the market.

**Evaluation of Startup
India Proposals for Tax
Incentive**

Department of Industrial Policy and Promotion (DIPP) has constituted a broad based Inter



Fig 3

Ministerial Board (IMB) as part of the initiative to boost Startups. The IMB considers applications of Startups for claim of various tax incentives under the Income Tax Act 1961. Incentives include exemption from levy of income tax on share premium received by eligible Startups under Section 56 of The IT Act and 100% exemption from tax on profits from income for 3 years out of 7 consecutive assessment years under Section 80, IAC of the Act. For availing all these tax incentives, the startups should have an innovation in it. NRDC has been entrusted with the responsibility to assess whether the Startups applied for these tax incentives have innovation in them as per the definition of a Startup India/DIPP and give its recommendation to IMB. So far NRDC evaluated about 4,500 Startup applications who sought the tax benefit and presented its recommendations to IMB. So far 94 Startups have received income tax exemptions.

Supporting Implementation of IOCL Startup Scheme

To Support and Strengthen the Startup India initiative of Govt of India, IOCL formulated a unique Startup Scheme under which IOCL offering Rs 1 to Rs 3 cr grant to each selected Startup in the energy and relevant Sectors.

NRDC was entrusted with the responsibility of assisting the IOCL in selecting the right entrepreneur/Startup for funding, incubating the Startup, providing mentoring, hand holding, protecting the IPs, programme monitoring, review and evaluation as per milestones, valuation of the Startup after incubation period / project is completed, so that IOCL can take an appropriate



Inauguration of CSIR-CEERI Pillani Incubation Centre at Jaipur.

decision on the IP generated. About 30 Startups from all over the Country have been selected and they are being nurtured and incubated.

Incubation Centre for Startups

Incubation Centre is an important Cog in the wheel of innovation. China has more than 3000 Incubation Centers, US has about 2000 such Incubation Centres but India has about 270 Incubation Centres and accelerators. There is an immediate need for establishment of more Incubation Centers

/Accelerator in the Country to make India a leading Innovation/Startups Hub. NRDC has established recently its own Incubation Centre at its Corporate Office in Delhi and incubating 4 startups. Further NITI Aayog has also sanctioned Atal Incubation Centre to NRDC. In order to Strengthen the Incubation Support System, NRDC is in discussion with CSIR to establish and manage their incubation Centers. NRDC has partnered with CSIR-CEERI, Pilani to manage its incubation Centre at Jaipur, where is 8 Startups are being nurtured and incubated.

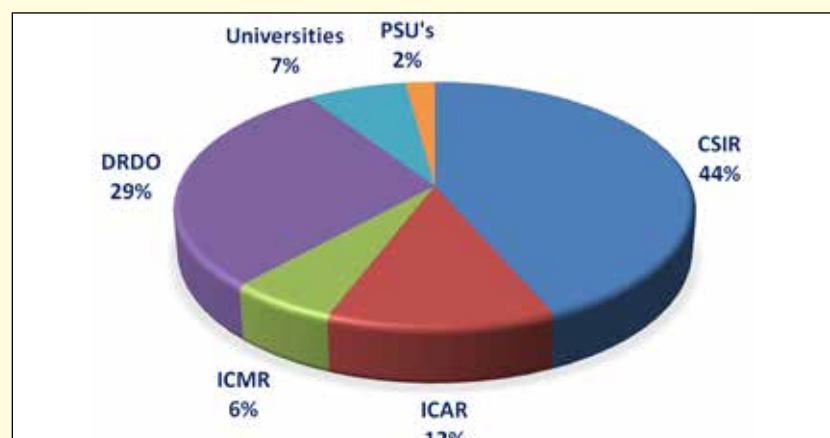


Fig 4: Sources of Technologies licensed by NRDC (5000 Nos.)



Inauguration of NRDC Incubation Centre by Dr. Girish Sahani, DG-CSIR & Secretary – DSIr.

Similar proposals with CSIR – IMMT and CSIR –NAL are also at the advanced stage of execution.

NRDC has also partnered with AP Innovation Society and Guhawati Bio Tech Park/ Incubation Centers and providing incubation Services.

Seed Funding

Though there are several funding mechanisms available for financing Startups, during the early stage and later stage but availability of Seed funding to

cross the “Valley of Death” (until reaching the breakeven point) is still a challenge for first generation entrepreneurs and Startup founders. To bring innovative and disruptive ideas to market place, Govt. should play a major role in providing risk/seed capital or social Venture Capital Fund. To bridge this gap, in a small measure, NRDC has been providing seed capital to few innovative Startups. One of the recent success story of NRDC is M/S UNIPHORE, which has

developed a speech analytics solution. The Startup was incubated in IIT Incubation Centre. NRDC provided seed fund to the Startup in 2008-09 and exited from the Startup in 2014-15 at a 15x. As per industry forecaste M/s Uniphore has the potential to become a unicorn in the next 2-3 years. The other success stories wherein NRDC invested and brought innovative products to the market are Blood bags Spirulina Algae, Rice Husk Particle Board, Azadirachitin, and Hydrogel, etc.

Intellectual Property Protection

In the Knowledge economy, protection of IP is very important. If the Startups do not protect their IP adequately it may lead to enormous financial losses. The financial or business loss could happened by two ways (i) Once the product /service is successful in the market others may copy and capture the market (ii)the Competitors may file infringement suits against the startups stating that the startup has copied their patents. Fighting infringement suits are expensive. Therefore it is essential to protect the IPs of the product/ Service/ technology adequately at appropriate time. To support this important cause NRDC file and protects IPs of inventors/ innovators/ Startups, under various schemes including scheme for facilitating Startups Intellectual Property Protection (SIPP) Scheme under which NRDC file IPs free of cost to Startups. So far NRDC filed about 1900 IPs to various inventors/ innovators/ startups. NRDC also established a University Innovation Facilitation Centre and 2 IPFC Centers supported by MoMSME across the country for promoting the IP culture.

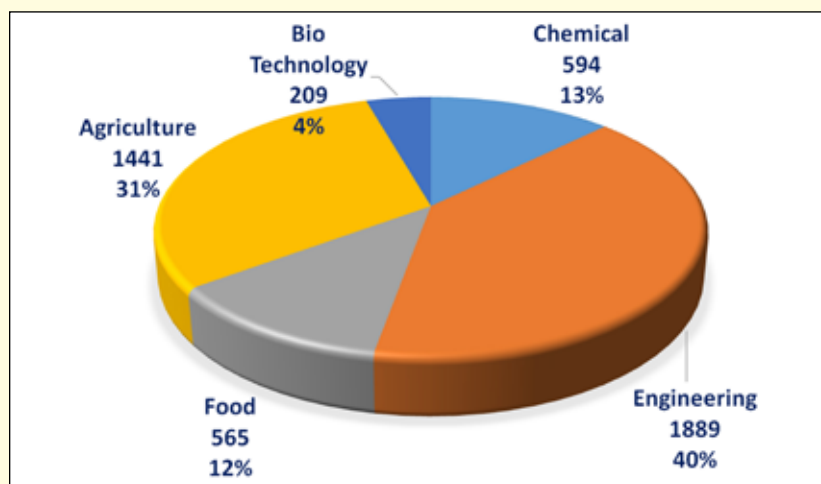


Fig 5: Areas of Technologies licensed by NRDC (5000 Nos.)

Mentoring

Mentoring by experts is essential for success of Startups particularly for first generation Startups. As NRDC is a pioneer and has about six decades of experience in promoting innovation, technology transfer in diverse domains, partnered with large member of national R&D Labs/universities in taking their technologies/innovative products/services to the market place and aware of the experts available in the Country in different domains. Depending upon the need of the technology/Startups, NRDC can provide or connect the domain experts to Startup. It has a large pool of domain experts who have been providing mentoring to all its Startups that are being nurtured at different locations.

Summary and Conclusions

Today time is ripe to become an entrepreneur in India. Startup ecosystem experts, founders, investors and policy leaders have acknowledged the strength of current Startup ecosystem in India at several reputed platforms. The ecosystem comprise of over 14,600+ Startups, approximately 270 incubation & business acceleration programs, 200 global & domestic VC firms supporting homegrown Startups, and a fast growing community of 231 angel investors and 8 angel networks. India also boasts of being home to the 3rd largest unicorn community.

The Startup India initiative has contributed significantly to the Startup movement across the country and a surge in entrepreneurial activity has been observed



since 2016. Indian startups ecosystem can attain higher acceleration by addressing the following challenges:

- Structured institutional support for early stage Start-ups to tap into Global markets. E.g. JETRO promotes business collaboration between Japan and other leading startup ecosystems
- Move beyond Startup hub to Sector specialists hubs. E.g. aligning state policies to help create sector hubs/technology hubs. E.g. London is a FinTech hub, Tel Aviv is a Cyber security hub.
- Supportive Government procurement processes and policies. E.g. Startups have the potential to disrupt service delivery system of government and public sector; Government needs to open itself up as a market for startups. Overall policies need more predictability.
- Focused support for Advanced Tech Startups. E.g. Advanced Tech Startups need support

for testing, certification, global marketing, and patent filing.

- Bringing focus on capability building in incubators and Accelerators. E.g. while there is growth in number of incubators/accelerators there is lack of mentors, training programs, and tool kits to make programs successful. Need more focus on outcomes and tangible value addition?
- In order to ensure success of the Startup India Initiative, it is important for all Stakeholders to come together and align their vision of fostering the startup eco-system.

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iDEATION - Startup Initiative of Numaligarh Refinery Limited



D Rajkumar
Chairman, NRL

Several programs have been undertaken across the country since the launch of the 'Startup India' initiative by Hon'ble Prime Minister Shri Narendra Modi on 16th January, 2016, to contribute to his vision of transforming India into a country of job creators instead of job seekers. While major startup hubs were bustling with activity and funding, the North Eastern part of the country was still away from the mainstream buzz. Being a conscious Corporate citizen of this region, Numaligarh Refinery Limited (NRL) felt the much needed boost required in this region to support and nurture its intrepid entrepreneurs. With this commitment in mind NRL commenced its flagship Startup funding initiative christened, 'iDEATION' in the year 2017 to lend wings to the dreams and ideas of prospective entrepreneurs from the North East (NE), selecting promising ideas and assisting them to grow. iDEATION is NRL's contribution in driving the ambitious 'Startup India' Mission of the Govt. of India which fosters to build a startup ecosystem in the country. This



initiative was conceived to usher in a culture of entrepreneurial orientation in the North East, while furthering the Company's Corporate Vision and Mission of providing an impetus to the development of the region.

The initiative sought to invite innovative business ideas across any sector for funding under three categories:

Category I: Ideas requiring seed funding for incubation to make it ready for commercialization.

Category II: Commercially viable innovation requiring early stage funding.

Category III: Scale up funding for young start-ups.

NRL has earmarked a fund of Rs.10 Crore to be invested in selected startups, primarily from the NE region, over a period of three years.

1st Edition

Launched in the year 2017, the 1st edition 'iDEATION 2017' leveraged on the wide outreach of internet that has almost half the world connected, by prudently promoting the initiative on digital media to reach out to its target audience thereby

taking forward the 'Digital India' mission of the Central Govt. in the process. The campaign was launched digitally in the month of June 2017 and was run for a period of 2 months. There was also a grand launch program in Guwahati on 4th July 2017 to formally announce the initiative, which was well attended by a host of luminaries in the field of Start-up and hundreds of budding entrepreneurs representing academic institutions, entrepreneurs registered under MSME and local start up clusters along with other stakeholders. iDEATION website with url www.ideation.nrl.co.in was also formally launched on the occasion. The website other than featuring details of the scheme facilitated online submission of Startup ideas till 15th August 2017. In a run up to the event, iDEATION Facebook page, 'nrlideation' and Twitter handle '@nrlideation' was launched to reach out to a predominantly young target audience which it sought to tap. iDEATION 2017 leveraged primarily through a well-crafted social media strategy to maximize the reach and create mass awareness about the scheme in specific and the concept of entrepreneurship as a whole. The enthusiasm and interest that the initiative evoked, was manifested by the fact that 362 ideas were received within the due date of 15th August 2017 which included more than 11,000 hits in the website and 2,500 likes in Facebook of the Company. This social media campaign also won accolades at the SCOPE Corporate Communications Excellence Awards 2017 and PRSI National Awards 2017.

Thereafter, a 3-stage screening process was carried out involving



Former Director (Finance) and now MD NRL Mr. S. K. Barua exchanged MoUs for Startup funding with selected startups in presence of Hon'ble Petroleum Minister Mr. Dharmendra Pradhan, CEO NITI Aayog Mr. Amitabh Kant and Former Petroleum Secretary, Govt. of India Mr. K. D. Tripathi at New Delhi on 25th October 2017 at the launch function of Startup Initiative in Oil and Gas sector.

an independent jury comprising of Mr. Arvind Krishnaswamy, BPCL; Dr. Saji Gopinath, Kerala Startup Mission; Mr. Achitra Borgohain, Startup entrepreneur and CEO, Binbag;

Saikia, Investment Banker and Mr. Nikunja Borthakur, NRL. 4 projects were finally selected for funding in the 1st edition of iDEATION 2017 for a total funding of Rs.1.29 crore.

S N	Startup Name	Proposal	Type of funding
1	Arohan Agri-sciences	Developing and using Bamboo & Water Hyacinth Plastic composites to make low cost flood resistant modular housing for sustainable livestock management in North-East	Seed Funding
2	Deroi Tea	Prototype of a Tea Drier (5-25 KG) using a novel process for tea manufacturing	Seed Funding
3	Automovill Technologies Pvt. Ltd.	Setting foothold in North -East space and setting up all India Back-office in Guwahati for its multi brand car servicing aggregator business currently operating in NCR and Bengaluru	Scale up Funding
4	Parking Rhino	Launching the Company's global cloud based AI & ML driven smart parking system in Assam, implementing its 'onboard & digitized parking locations' in various cities & towns of Assam along with developing illegal parking enforcement technology, automatic car verification system for Traffic Police dept., vision system for real-time parking occupancy information and city surveillance.	Scale up Funding



2nd Edition

After a successful 1st edition, iDEATION- 2018, the 2nd edition was launched in February 2018. Proposals were invited through the official website <http://www.ideation.nrl.co.in/> till 30th April' 18.

Apart from engaging with the target audience through social media as done in the 1st edition, iDEATION 2018 took a step ahead to directly interact with young entrepreneurs particularly from the student community in university and college campuses by organizing a series of startup boot camps to encourage and motivate them. These Startup boot camps were organized at select college/university campuses before the deadline for submission of proposals for iDEATION 2018 as part of the strategy to attract quality proposals from student entrepreneurs and maintain a supply chain of quality ideas. These Startup boot camps titled as “#outofsyllabus” were organized in various campuses from 8th-14th March'18 by Mr. Rohit Radhakrishnan, a young entrepreneur and CEO of Openfuel. Various campuses of the state like IIT Guwahati, Assam Engineering College, Gauhati

Being a conscious Corporate citizen of this region, Numaligarh Refinery Limited (NRL) felt the much needed boost required in this region to support and nurture its intrepid entrepreneurs. With this commitment in mind NRL commenced its flagship Startup funding initiative christened, 'iDEATION' in the year 2017 to lend wings to the dreams and ideas of prospective entrepreneurs from the North East (NE), selecting promising ideas and assisting them to grow.

University, Jorhat Engineering College, Dibrugarh University, Assam Agriculture University and Kaziranga University were visited by the iDEATION 2018 team. Over 700 students enthusiastically participated in the boot

camps- proactively sharing and discussing their thoughts, ideas, and apprehensions on taking an entrepreneurial journey through startups.

301 proposals were received in total during the 2nd edition, out of which 86 proposals were selected for presentation before the jury. It was observed that there had been a marked improvement in the quality of proposals submitted and therefore opportunity was given to more prospective entrepreneurs to pitch their ideas. Finally, 28 proposals were recommended by the jury for funding by NRL. Considering the mandate for funding of startups in the form of both “grant in aid” and “equity funding” for ensuring return from the investment and sustainability of startup funds, the jury recommended 11 proposals for consideration for equity investment by NRL on a deferred valuation subject to due diligence. The remaining 17 proposals were recommended for funding for incubation in the form of grant in aid before they reach the stage of commercialization. Additionally, jury has also recommended 6 additional proposals for evaluation by NRL under R&D initiative. NRL has joined hands with IIT Guwahati for providing incubation facility and mentoring to the start-ups selected for funding for incubation in its established Technology Incubation Centre (IITG TIC).

The journey so far for iDEATION has been enriching- both for the supported entrepreneurs as well as for NRL in terms of learning and experience. Together, this initiative is envisaging to create a sea change in the socio-economic scenario of the region and leave a positive impact on its people. ■

Role played by Bharat Electronics Ltd in Promoting Start Up India Initiatives



Vasant S. Shenoji
AGM
(Technology Planning)
BEL



Start-up India is a flagship initiative of the Government of India, intended to build a strong eco-system for nurturing innovation. Start-ups are intended to complement major industries in the country to drive sustainable economic growth and generate large scale employment opportunities. Start-ups may have the necessary operational flexibility which is not possible in large organisation

The Government through this initiative aims to empower start ups to grow through Innovation and Design.

About BEL

BEL is a Navaratna Public Sector Unit under Ministry of Defence and is India's foremost Defence

Electronics Company. BEL is a multi-product, multi-technology, involved in development, manufacture and supply of Defence electronic products and systems. BEL has established nine units, two Central research laboratories and a Product Development and Innovation Centre spread across the country. The Business segment of BEL includes, Communication systems, Radar systems, Sonars, Electronic Warfare, Electro-Optics, Tank systems, Gun-upgrades, Command & Control systems, Non - Defence product & e-governance. BEL has adopted a multi pronged strategy to engage with promising start ups in the relevant areas by associative with incubation cell, Accelerator Programs, Academia, collaborative R&D etc..

BEL initiatives for engagement with start ups

BEL has adopted a multi pronged strategy to engage with promising start ups in the relevant areas by associating with incubation cells, Accelerator programs, Academia, Collaborative R&D etc. In this regards, BEL has initiated discussions with leading, Academic Institutions/Universities Incubation cells, MSME's, Individual innovators to Identify and work with potential start ups.

Major initiatives in this direction is the formation of Defence Innovation organisation (DIO) where in BEL and HAL Jointly created a section 8 not-for-profit Company, called DIO, with equal equity participation to encourage

Innovation in India Defence sector. DIO has issued Expression of Interest (EOI) for 11 challenges of Tri-services through a scheme called Defence India start up Challenge (iDEX). This will aim to help new technology Products I technologies to find a market and early commercialization through Indian Defence Establishment.

The target participants will get grants on milestone basis in the form of equity/ debt/ other relevant structures. They will also get access to Defence testing facilities and experts for product/ technology development. The applicants will be encouraged to spend on Research & Development, Prototyping, Pilot implementation and market assessment.

The Present problem statements are for the prototype development or commercialisation of product and technologies in the following areas (Under the present IDEX challenge)

- Sensors & Protection systems for Armoured vehicles/Individual soldiers
- 4G/LTE for Tactical LAN
- IT hardware with graded encryption
- Water Purification & desalination system
- Artificial Intelligence
- High power Lasers
- Un manned/ Remotely operated Vehicles (Air, Land, Surface/ Under water)

Selection Process consists of Screening by a high-powered committee of Defence and technology experts based on potential for proposed prototype to the existing Indian defence needs, potential to deploy an existing technology or patent to meet

Indian defence needs or the ability of proposed prototype/product/technology to reach civilian market.

BEL is working continuously to identify Indian Industries as part of collaborative Research & Development (R&D). This approach facilitates workings with partners comprising of Indian Private Industries Including MSMEs, reputed Indian academic institution, for development of subsystems and software to bridge the technology gaps. The collaborations partners are selected based on transparent EOI process or by an expert committee. BEL has do far empanelled 237 industries under collaborator R&D scheme.

Further to attract serious partners for Collaborative R&D, the production quantities of the developed product/modules are shared with the selected partner. The exact share of production between BEL and partner is worked out based with Managements approval and as incorporated in the RFP. For such development, a Joint IP between BEL & partner is in place.

MSMEs are an important part of the supply chain and BEL has introduced several measures to facilitate procurement from MSMEs such as publication of a list of items that are earmarked for procurement from MSMEs in Company website, Vendor registrations portal etc. A total of 110 MSMEs are in the list of BEL.

The current engagement with start ups includes Joint development, Transfer or Technology, Manufacturing or Marketing activities. Several Memorandum of Understanding (MOUs) have been signed with promising

start ups for Joint development, manufacturing and Marketing of the solutions from these select start ups. Many of these engagements are expected to yield benefits shortly BEL has identified as given below several areas considered for procurements from start ups

- Machine learning
- Cyber Security
- Artificial Intelligence
- Embedded Computing

BEL has relaxed certain eligibility criteria (such as Prior Turnover, Prior experience etc.) for registration from start-ups in order to encourage start ups to participate in supplies for BEL procurement. Additionally, BEL has nominated officers who are the nodal contact persons for start ups and Make-in India Initiative in BEL corporate office and from each of its manufacturing's Units. The details of the list of officers are available in BEL website.

In addition to the above, BEL is organizing out-Reach Programs, seminars, Hackathon to reach out to start us such as one day national seminar on "Role of start ups in Defence" organized by BEL in association with HAL and BEML, in Jan 2017 and Smart India Hackathon 2017

Summary and conclusion Bharat Electronic Ltd has always laid thrust on Innovation towards strengthening the business requirements and addressing customer needs. Towards this requirement, BEL, taken many initiatives to work with start ups in line with Government of India start ups initiative policy and will continue to work hand in hand with start ups. ■

Corporate Connect with Start-ups



Anil Khaitan
Immediate former President
PHD Chamber of Commerce
& Industry



Start-ups are the new avenues for creating significant wealth, while simultaneously generating sizeable employment in the quickest possible time.

Indian start-ups are deploying different business models, converging market acumen with technological expertise.

Some start-ups operate on the new service delivery model, directly catering to users at large. Others target niche technology areas, such as new medical devices, algorithms for improving diesel engine efficiency, design

and fabrication of small satellites, and so on.

For a majority of youth, the greatest satisfaction is seeing their ideas gain wider acceptance and to see its practical reality. Start-ups have emerged as the number one career option for many graduates from leading schools of business and technology.

The success of start-ups depends on a complete innovation and financing ecosystem, comprising incubators providing appropriate technology and hardware systems, effective mentoring, access to easy finance, assistance in

the marketing of products and services.

Such vibrant ecosystems are the key for creating start-ups success in Silicon Valley, Cambridge (UK), Tel Aviv etc.

A number of start-ups have found success in e-commerce and other IT-based applications of the services sector. However, they are yet to take off in a big way in the manufacturing space. We need to accelerate the spread of the start-up movement to a wide array of sectors – Agriculture, Manufacturing, Education, Healthcare, and many others.

Under the 'Start-up India' scheme, 12,300 start-ups have been successfully recognized by the Department of Industrial Policy and Promotion. The scheme provides several incentives such as tax exemption for 3 years, benefits for Intellectual Property Rights, relaxation in public procurement norms, and faster exit options etc.

As of August 2018, the world has more than 260 unicorns that has valuation of US \$1 billion and above and out of 260, India has 13 of them, including firms such as Ola Cabs, Hike, InMobi, Quikr, One97 Communications and ReNew Power Ventures.

However, given the nature of start-ups, nearly 90% of them are seen to fail within the first 3 to 5 years – 1,000 start-ups closed down in 2016. The highest number of failures were recorded in the logistics, e-commerce and food technology sectors. The major factors for their failure include lack of market need, shortage of funding, gaps in the team, competitiveness, poor marketing, or product mistiming.

Corporate Connect

The high rate of start-up failures calls for newer strategies for improved success rates. Mentoring by external experts or providing easy finance ultimately may not prove beneficial in the long run. Understanding market needs is crucial for any start-up. To address the issue of market reach and access for start-ups, a novel approach is to link them with large corporate houses in allied business areas. 'Corporate Connect,' start-ups are nurtured



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with specific knowledge inputs and also supported with adequate financing by large corporates. In the process, the start-ups develop products or services catering to the needs of the large corporates. Thus, they quickly become an integral part of the supply chain or devise newer technologies for better efficiency or productivity.

In due course of time, the corporates may also plan for investing substantially in these start-ups, helping them stand on their own feet. Such a dedicated corporate connect with the start-up will go a long way in helping ideas germinate into appropriate end-uses and ensuring the success of the startupreneurs. On an encouraging note, many companies have already signed on to such a program to strengthen the start-up ecosystem in India. To conclude, financial support and mentorship for start-ups in different sectors with the point of view of potential business partnership will aid them in scaling up their businesses. ■



Start-Ups and the Indian Economy



Prof. Dr. Aman
Agarwal*



Prof. Dr. Yamini
Agarwal **

India has made enormous strides in the last 73 years of India's having regained independence. India enjoys a rich heritage, intense diverse cultural and socially rich setup. Economic growth and development in India, since 1980, has been amongst the fastest in the world; social indicators for literacy, education enrolment, disease and mortality, and gender have steadily improved; and poverty has fallen since the mid-1970s (World Bank, 2000). All this is despite having a population base of around 1.3 billion people, which had been growing at the given Hindu growth rate of 2.3% till 2010 and at 1.7% henceforth. India today stands to be THE Youngest Nation globally with over 742 million people (71% of total population) below 35 years of age and over 65% of young working population (between 15-45 yrs of age). Various international agencies have forecasted India to be amongst the top three (3) economic nations

by 2015-2025 (Agarwal, 1994, 1995, 2001; CFO Survey, 2018; Jaitley, 2018; Agarwal, Agarwal and Agarwal, 2018; Agarwal, 2019). With these, we hope to achieve the dream vision pictured by our Honorable President APJ Abdul Kalam jee in his work "India 2020" and our Honourable Prime Minister Narendra Modi in his speeches since 2014. All this has been made possible only because of the dedicated and law abiding citizens of this great nation, who are the soldiers of the socio-economic growth and the vision of our leaders who are the pillars behind success of our sustained democratic progressive Bharat.

India has also developed a diversified industrial base and a relatively large, robust and sophisticated financial sector. India is known in the international spheres for its technical human resource, financial framework, manufacturing capabilities and the software sector. The FDI Flows on monthly basis in India

have increased from US\$ 0.2 billion/month (in 2000-01) to US\$ 1.3 billion/month in 2010-11 to US\$ 5.5 billion/month in 2017-18, which is a clear evidence to the fact. The FDI Flows in 2018-19 are expected to be around US\$ 72 billion (i.e. US\$ 6 billion/month). These successes has taken place against a backdrop of India being the largest democracy of the world with a significant degree of political freedom and stability. It is a matter of pride that we have had the successful conduction of election ever since its independence in 1947. The total number of votes in India (671 million i.e. over 62% of population), which far exceeds the total population of America and it also exceeds the total population of the whole of Europe along with a participation of over 200 political parties (largest multi-party system base observed by any democratic country globally).

India's re-entry into the globalized world and sustained growth in the last decade (especially last

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4 years) has opened up immense possibilities for becoming a truly favoured global democratic nation, economy and market. India has benefited from the old heritage (dating back to over 10,000 years), traditional value system and economic and societal norms. These have empowered India and Indians to accommodate and adjust with changing times and scenarios over the history. We have seen times when there was free movement of labour and capital in the golden arena of our nation Bharat. Today's globalization does encompass part of it, wherein capital and trade is certainly an issue. The gradual privatization and the consequent need to regulate investments; the growing importance of private investment and the emergence of the mixed-market economy are some of the characteristics of the political economy of India resulting from its engagement with the global economy in the 1990s. If we are really talking of a globalized world, then we need to free ourselves of these barriers and allow the market mechanism to freely flow and be part of this large society.

It has been widely observed and

projected by numerous research studies that globalization and financial developments in the world economy have altered the economic frameworks of both developed and developing nations in ways that are difficult to comprehend. The persistent rise in the dispersion of current account balances of the world as a whole, wherein the sum of surpluses match the sum of deficits has grown substantially since the World War II (Agarwal & Agarwal, 2001; Agarwal, 2004; Agarwal and Agarwal, 2017; Agarwal, Agarwal and Agarwal, 2018). These global trends has led to creation of extensive levels of in-equalities of income, gender disparities, gender pay differences, civil disorders, un-employment and lowering standard of livings enhancing poverty and deprivation globally. India has tried to shield itself from such disorders; however the 1% of Global population having 50% Global wealth (Nov 2017) is a clear indication of challenges that lie ahead. In India it is estimated that 57 Indian Billionaires own wealth equal to Bottom 70% of India's Population (Credit Suisse,

Nov 2016). The Government today is perplexed with this challenge to serve the society and induce equitable growth through creation of Jobs & Growth. The initiatives undertaken by the government under the "Make in India" campaign and the 21+ programs launched and monitored by the Prime Minister Narendra Modi himself in the last 4 years to induce financial inclusion, enhance banking, spread digital dividends, control inflation and money supply through drives like demonitisation, jan-dhan yojna, interlocking AADHAR and GST are expected to yield long term fruits which would be visible and appreciated in the coming 10 years. The mass support for most of these drives is a clear evidence of the faith and support by the people of India to foster these achieved.

Economic growth is known to be dependent on Employment growth. Many developed economies have shifted these resources to only one segment namely Services. The GDP contribution of services sector is between 60-80% for most developed economies in the last 4 decades. It is important that there is homogenous distribution of other sectors – agriculture and manufacturing to contribute and have sustainable economic growth. This is despite the fact that corporations see economically benefiting externalities in economic havens, low cost economic zones and developing regions of the world. It is important that the government steps in to create avenues for domestic and foreign participants contribute in the growth of the three sectors to have homogenous contribution to the GDP with small year-on-year variations. The Union Budgets of

Government of India presented in the last 4 years can see a clear reflection of this equitable distribution of resources empowering employment growth and Start-Ups to factor in the missing links. IIF has developed large numbers of Models for MSMEs and Start-Ups to enrich and take advantage of economic scenarios for building a bright future.

The Budget 2019 along with the earlier setups of Invest India, Startup India, Standup India, Mudhra Yojnas, Make in India, Fintech Frameworks, Payment Gateways, JAM framework, Jan Dhan Yojna, AADHAR, Ayushman Bharat, reorientation of MNREGA and many other outlays have laid the foundation to harness growth and prosperity of entrepreneurs and start-ups in all walks of life. All these budgets have been enablers with a focus on “Minimum Government and Maximum Governance” fostering necessary environment to breed start-ups. The budget has provided for largest producing investment and consumption boast through the allocation of Rs 75,000 crores towards direct transfer for UBI for 5 crore poor having less than Rs 135 per day income and via the Rs 5 lakh Rebate which will cover 60 per cent of the middle class population of 75 crore (750 million citizens) to facilitate shifts for un-organized to organized sectors, women working from home and formalizing ease of Starts Ups revenue projections of Indians falling within the Small and Medium Scale enterprise (as sole proprietorship firms) within the MSME, despite keeping fiscal deficit in check at 3.4 per cent (as projected in my article in Financial Chronicle on 30th January 2019). The budget

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will further increase jobs, employments and foreign direct investment and lay path for 8 per cent + GDP Growth in 2019-20 with the start-up framework being the backbone of the digital framework economy India is moving towards. The dividends of the Start-up and Digital frameworks induced by the Government of India in the last 4 years have nurtured rich dividends for the future of Indians. Women would be seen at the forefront of these

movements of being the engine of growth for Start-ups in India.

We feel that the Budget 2019 is balanced, progressive, farsighted, has a long-term vision keeping electoral bias. It has provisioned adequately to handle farm distress for the deprived and the most disadvantaged, provide way for millions in India to take pride in their knowledge and seek livelihoods with their skills and potential, further secure and provide for healthcare, defense, education, basic income framework, housing and infrastructure developments for under-privileged in all sectors including agriculture, industry and services, ignoring the vote on account convention when elections are due. The Budget would lead to creation of frameworks which will help reduce levels of in-equalities of income, reduce gender disparities, reduce gender pay differences, reduce civil disorders, create newer avenues for fighting un-employment and foster higher standard of livings reducing poverty and deprivation though better health, happy living, economic stability and inclusion of everyone in the financial development of India.

We feel that regaining lost glory of mutual respect is jointly shouldering towards a peace loving harmonious growing global society is the demand of the hour. While addressing various Parliamentary, Governmental and International Agency forums we have stressed on better ties between India, Europe and the global village. We have also stressed on the need to address some of the key issues before synergising ties to improve confidence, maintaining positive outlook and realign political will for developing



a progressive inter-regional focus for business, trade and societal interactions.

The efforts by central banks, regulatory bodies, governments and international agencies around the world to increase the availability of liquidity have contributed to tentative improvements in credit market functioning. However, the continuing volatility of markets and recent indicators of economic performance confirm that challenges remain. US would need to undertake major hard steps to rectify its financial turmoil, which has accumulated for over 2 decades and is having spill-over effects building costs for other nations (Agarwal & Agarwal, 2001; Agarwal, 2007). Hence policy-makers need to monitor developments closely, and stand ready to take additional hard steps should conditions warrant. We feel that close working relationships between central banks, governments, international agencies and the academic world considering World Economy as a single entity and rising about country specific selfish interests can help build a Sustainable Financial World tomorrow for a bright future of

India. Conservative economists, since Adam Smith, have promoted the idea that a free-market economy that has minimized government regulation and more dependence on the forces of supply and demand, which is considered to be the most reliable and efficient economic system. Yet, the 1990s financial crises (Agarwal and Agarwal, 2001), stock market crashes, scams (corporate/political) and the Global Financial Turmoil of 2007-08 have led to economic contractions. These events have not only devastated countries around the world but also increased social tension and disparities. The frequency and extent of these financial debacles have led policy-makers, regulators, economists, journalists, market operators and the masses to call for reforms in the form of a new “international financial architecture & a self sufficiency model” with improved financial literacy. Arthashastra by Kautilya (Chanakya – The true father of economics) is a revered work in this direction.

Agarwal, Yadav and Iyer (2010) Goal Programming model is identified as multi-criteria technique

providing satisfying solutions that overcomes the deficiency of the single objective framework using accounting proxies for multiple objective framework. The steps involved in the development of a firm specific capital structure decision making technique is: (a) management participation; (b) analysis of objectives, goals and policies using accounting proxies; (c) formulation of a goal programming model; (d) testing the model and solution and (e) final implementation of the solution. The model allows simultaneous solutions to a system of complex multiple objectives. It utilizes an ordinal hierarchy among conflicting multiple goals where low order goals are considered after higher order goals are satisfied or have reached the desired limit. There is an in-built flexibility in the model. The Goal Programming Model for multi-objective capital structure decision using accounting proxies has been tested on an Indian Agricultural Firm. The model supports the fulfillment of multiple objectives and constraints simultaneously. The model may prove to be highly beneficial for firms in achieving an optimum or satisfying practical solution to capital structure decisions incorporating multiple goals in a systematic and scientific way in today's complex and dynamic business world with accounting information.

Agarwal, Agarwal, Agarwal and Agarwal, (2017) work on General Theory of Employment, Wealth and Efficient labour market through setting up of a National Labour Exchange can serve to be a vehicle of facilitating information for available jobs i.e. employment opportunities at given return to

Table I: Genesis of Select few Key Venture Finance Historical Startups

The current research of Agarwal (1974, 1988); Agarwal, Agarwal and Solojentsev (2008); Agarwal, Agarwal, Agarwal and Agarwal (2018) traces the genesis of Startup Venture Finance in India to fifty century BCE Classical Venture Finance, which can be traced to development of Nalanda University, Takshashila, Mauryan Empire and in recent times to Biocon and VLCC. Corporate Venture Finance can be traced to emergence of Alexandra Cotton Mill, Benaras Hindu University, Yarn and Jute Mill of Goenka, Lijjat Papad, Infosys and Kshema Technologies. Institutional Venture finance started in late 1980s with the development of TDICI in 1988.

Year	Start Up Venture	Finance Provider/Contributor	Country
527 BC	Nalanda University (527BC to 1197)	Kumaragupta	India
518 BC	Takshashila	King Taksha	India
350 BC	Chandragupta Mauryan Empire (350-283 BC)	Chankaya (Kautilya)	India
1492	Christopher Columbus expedition (Colonization)	Isabella, Queen of Spain	Spain
1869	Alexandra Cotton Mill	Jamsetji TATA	India
1906	Xerox	Haloid Corporation	US
1908	General Motors	DuPont (VF in 1920)	US
1915	Banaras Hindu University (Oriental learning and Theology)	Kashi Naresh and Sri RS Bahadur, Maharaja of Darbhanga	India
1919	Yarn and Jute Mill	Ramnath Goenka	India
1924	IBM (Punched Card)	TMC (1896), CSC(1891) and ITRC (1900) merged	US
1926	Bajaj motors (Motor Vehicles)	Seth Bachhraj	India
1938	Eastern Airlines and Douglas Airlines	Laurance Rockefeller funded Venrock	US
1946	Amul	Gujarat Co-operative Milk Marketing Federation Ltd.	India
1950	Share cropping farming institution (Tobacco)	Landlords and farmers	India
1957	Digital Equipment Corp. (now HP)	Georges Doriot, Ralph Flanders and Karl Compton/ ARDC	US
1959	Fairchild Semiconductor (Practical integrated circuit)	Laurance Rockefeller funded Venrock	US
1959	Lijjat Papad	Shri Mahila Griha Udyod	India
1960	Florida Foods Corporation (Nutritional one minute juice)	J.H. Whitney and Company	US
1962	Reliance Commercial Corp.	Dirubhai Ambani	India
1968	Intel (X86 Microprocessors)	Robert Noyce and Gordon Moore	US
1977	Oracle (Database software)	Larry Ellison, Bob Miner & Ed Oates	US
1978	Microsoft, DOS (Disk Operating System)	Bill Gates and Paul Allen	US
1978	Biocon	Biocon Biochemical Ltd. (Ireland) and Kiran Mazumdar Shaw	India
1981	Infosys	Sudha Murthy	India
1984	Cisco (Router)	Len Bosack and Sandy Lerner	US
1987	Business Finance Education in India	Indian Institute of Finance	India

labour and availability of labour offering the services for a return based on their value addition. The proposed work will fill the exiting gap of asymmetrical information. The paper proposes setting up of a National Labour Exchange along the lines of National Stock Exchange, Bombay Stock Exchange and Commodity Exchanges Worldwide in order to promote efficiency in the labour market, full employment and generating wealth and positive contributions to GDP. The paper also considers that Labour as a valuable Resource and a Wealth of the Nation, having potential to generate more wealth. The proposed work would induce competition both among employers and labour to maximize the productivity, maximizing wealth, GDP and social welfare. Labour, instead being idle or underemployed would prefer to pick up a job with lower return. It would provide transparency, avoid exploitation of labour, Efficiency in labour market would help foreign investors, to know about the skill, experiences, qualifications and desired return of labour in a country. This in turn will remove any fears regarding the availability of labour in a given industry.

The proposed Model of creating efficient Labour Market through National Labour Exchange will facilitate an automatic way for Full Employment, generating wealth for the nation, firm and Labour, easy access to information about the availability of Labour (man hours) and jobs. It would also help save employment costs in a Market Driven Economic System with Asymmetric Information. National Labour Exchange as proposed would also help Rating Certificates, Diplomas,

1987	3i Group	Bank of England	UK
1989	VLCC	Vandana Luthra and family	India
1992	MASTEK	ICICI and UTI promoted TDICI	India
1994	Amazon.com (Online Book store)	Jeffrey P. Bezos	US
1994	Yahoo (Search Engine)	Sequoia Capital	US
1996	Hotmail (Free Webmail service)	Draper Fisher Jurvetson	US
1997	Kshema Technologies (Customised IT Services)	Anant Koppar	India

Source: Agarwal, Agarwal and Solojentsev (2008) and Agarwal, Agarwal, Agarwal, Agarwal (2018); Self Formulated from Historical Archives, Encyclopaedias & Wikipedia

Degrees, skill development and experiences based on Scores and would facilitate transparency in the Efficient Labour Markets. It would automatically adjust the return to labour based on value addition and economic and business conditions avoiding the problems of laying off. Efficient Labour Market would facilitate perfect or nearly perfect mobility of labour through National Labour Exchange.

The World Economy is moving towards a new economic order. With the strong presence of US, Europe, Russia, China and India as key role players in the global economic framework, we may see a re-emergence of a multi-polar economic globe. The difference this time will be that each of these nations will have their edges different from the other. This is unlike the time when it was a bi-polar world with US and Russia being at the helm of affairs based on military might. What seems to be emerging as edges within these nations is US for its high-end technology and military structures, Europe for its financial strengths; Russia for natural resource extraction and military structures; China as a production

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hub and India as a Market. This would distribute the production centers, the market centers, the financial centers, the military structures to different regions within the World Economy. If we are really looking at building a stable and growth oriented future for Nation's in the global village, then we need to free ourselves of barriers and allow the market mechanism to freely flow and be part of this large society.

In our service to the nation as a teachers in the last 20 years addressing issues and forums on TV; Newspapers; Radio; addressing Parliaments; International Agency; various Governments/ Ministries and University conclaves based on my experience in academics, research, administration, we feel that India can foster the desired objectives in policy making and implementation with a dedication work force with agriculturists as their backbone, to enable strive foster the desired change and move by the government to induce Jobs and Growth orientated economic frameworks.

The initiative of the government to create Digital Frameworks and conversion of informal economy to the formal setup via adoption of series of digital frameworks and transfer facilities for social programs is commendable. Currency and the interplay between secure digital platforms play a critical role in the adoption of transparent and efficient banking. The proposal to set up of M5 as Money Supply with Cryptocurrency along the lines of inclusion 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 GDP and people at large. The work by Agarwal, Agarwal, Agarwal and Agarwal (2018) considers that Money as a valuable Resource and a Wealth of the Nation, having potential to generate/mobilize more wealth. The paper proposes that given the emergence of digital modes of money transactions, there is an urgent need for creation of Crypto-Currencies by National Governments to induce confidence and laissez faire through transactional efficiency in money market. Government Intervention (or Central Banks) to generate the Crypto-Currency is the need of the hour and critical for tomorrow's normal economic and business conditions in the economy when businesses and labour market source are global and looking for currency efficient sources.

The proposed Model of creating efficient Money Market through modeling of M5 will facilitate an automatic way for transactional efficiency, generating wealth for the Nations, Firms and people-at-large, through easy access to currency and opportunities for jobs and growth. It would also help save currency costs in a Market Driven Economic System with Asymmetric Information. The "New Avtar" of Money in the form of Crypto would witness the change the way money (currency) has looked traditionally for centuries in the form of gold, silver, leather, wood, metal, paper, plastic, stone and many others to a faceless virtual fully fractional form, but only when launched by Nations (via their Central Banks). Given the emergence of Crypto-products in the informal sector with multiple



players, it has become difficult for National Governments to regulate and calibrate the supply of money and its effects through Monetary Stabilization measures adopted by them, as these crypto-products allow billions/trillions of money be transacted globally without any checks and balances. More than the benefits, these products are emerging as threat to National Security; Individual's Wealth and Nations apart from the ills any speculative product brings with it to meet the needs of Greed of a specific group of people and rouge identities. Hence, the need for governments to act fast and consider to induce this financial innovation (crypto-currencies) as a currency of tomorrow into its basket of currencies, as done with various other monetary products in the last 6 decades (Agarwal, Agarwal, Agarwal and Agarwal, 2018)

We would like to lay stress again, that we first and foremost need to take care of the social security facilities/non-conforming systems existing in the economy towards the fulfillment and maintenance of the Senior Citizen's Dignity, Environment and a Social equilibrium in the society if we

truly want to build Nations' future. We are happy to note that the Budget 2019 has laid firm foundation for funding and laying road maps for a better oriented social welfare benefiting society. Today the World is looking at India, in the spin to march ahead together having a favourable outlook to investors bringing Investment to provide development, employment and growth opportunities for both India and Indians. Our PM Modi's endeavour to foster opportunities of a bright future for Indians and the Senior Citizens Dignity has been a key concern to induce desired growth in the economy. This needs to be attained by inducing efficiency and transparency in the governance; system of continuous healthy dialogue between the government and the people; respect for law through strengthening of education system; and empowerment of Women of India who nurture our future as the true voice of tomorrow. This will also ensure the re-emergence of the feeling of Sone Ki Chidiya (Golden Bird) in the hearts of every Hindustani for a better happy and healthy living in Bharat. ■

2018: A Landmark Year for Indian Tech Startups

\$11 Bn Funding. 743 Deals. 11 New Indian Unicorns



Pooja Sareen
Founder and Chief
Content Officer Inc42

Whatever be the nuances of entrepreneurship, startups have hit the big time in India and Indians have certainly taken to the entrepreneurial game like pros. Within just 10 years, the number of startups in India has multiplied seven times from 7,000 in 2008 to 49,000 in 2018.

This startup boom has given birth to an ecosystem which has, in turn, spurred several other mini-ecosystems. There are now more than 200 coworking spaces, over 250 incubators, and thousands of angel investors and venture capitalists in India, supporting startups in achieving their dreams.

India today has a diverse startup ecosystem, with each startup hub — from Kerala to Rajasthan — having its own unique characteristics, trying to solve a multitude of India-first problems. Increasingly, every government — across ideologies — wants to be seen as proactively promoting startups. The importance of this sector is just too hard to ignore.

2018: The Year That Passed

Unicorns were the flavour of the year in 2018. India witnessed the entry of 11 startups into the much-celebrated Unicorn Club. While it may not have been the best year in terms of the number of deals or funding, it marked several milestones, including the biggest acquisition in India's startup history — new policies, and the entry of some of the biggest international players into the country.

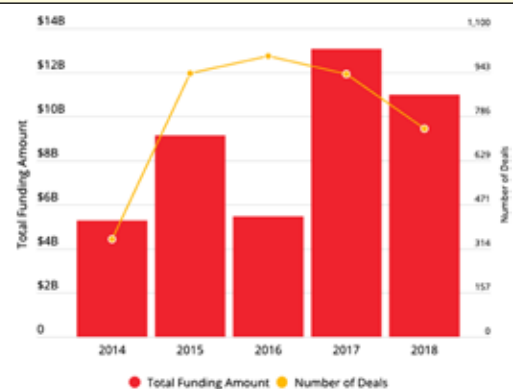
Startups such as Swiggy, OYO, and Paytm Mall, among others,

achieved the coveted unicorn tag last year. And the deal that created the most buzz in India as well as abroad was Walmart's acquisition of a whopping 77% stake in India's largest ecommerce company — Flipkart — for \$16 Bn.

According to Inc42's upcoming 'Indian Tech Startup Funding Report 2018', Indian tech startups raised \$11 Bn in funding across 743 deals with more than 637 Indian startups raising funding in 2018. This was slightly lower than the previous year (2017) when \$13 Bn funding was raised across 885 deals.

Indian Tech Startup Funding Report 2018 Deals and Funding Trend

Last Updated on:
14th January, 2019



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Inc42
DATALABS

Despite the slight dip in funding, 2018 was a year of transformation, excitement, and revolution for the Indian startup ecosystem. In just this one year, India produced 11 unicorns and also saw its fastest unicorn — Udaan — which crossed the \$1 Bn mark in just 26 months with a whopping \$275 Mn funding.

Tagged as ‘fallen sectors’ during the funding winter of 2016, both grocery and foodtech sectors were on fire in 2018. While Zomato and Swiggy gaining the unicorn status was a highlight for the foodtech industry, the grocery sector had its moment of glory in the growth achieved by Grofers and BigBasket.

Key Facts About Indian Tech Startup Funding in 2018

- Total funding amount in India’s Silicon Valley, Bengaluru, fell by 31% from \$6.86 Bn in 2017 to \$4.75 Bn in 2018.
- Overall, 125 merger and acquisitions (M&A) deals were reported in the Indian tech startup ecosystem.
- Late-stage funding increased by 18% in comparison to 2017
- There was a 40% drop in seed stage funding in comparison to 2017
- Enterprisetech and fintech witnessed the maximum number of M&As with 30 and 18 deals respectively
- Ecommerce investments fell by 41.37% in 2018
- Investments in healthtech and in deeptech surged by 45.06% and 20.68% respectively

Startups such as Swiggy, OYO, and Paytm Mall, among others, achieved the coveted unicorn tag last year. And the deal that created the most buzz in India as well as abroad was Walmart’s acquisition of a whopping 77% stake in India’s largest ecommerce company — Flipkart — for \$16 Bn. According to Inc42’s upcoming ‘Indian Tech Startup Funding Report 2018’, Indian tech startups raised \$11 Bn in funding across 743 deals with more than 637 Indian startups raising funding in 2018. This was slightly lower than the previous year (2017) when \$13 Bn funding was raised across 885 deals.

Fintech, Ecommerce — Investor Favorites

Fintech was the top sector in terms of the number of deals, raking in \$1.41 Bn across 121 deals. But, a slight decline was observed in funding amount in comparison with 2017. At the same time, continuing with the previous year’s trend, ecommerce witnessed the highest funding — \$2.1 Bn — in 2018. However, the amount was approximately 50% lower than in 2017.

Bengaluru Continues to Shine

Bengaluru scored 247 deals in 2018. It was followed by

Delhi-NCR, which notched a total of 224 deals. Other major cities such as Mumbai, Chennai, Hyderabad, and Pune also showed signs of growth.

Closing Notes

Since 2014, Indian tech startups have raised over \$44 Bn across 3,968 deals. While 2015 was the year of blind fundings and ‘me too’ startups, 2016 saw the funding winter of the Indian startup ecosystem, making entrepreneurs walk on thin ice. Things again gained pace in 2017, and the market moved through a phase of correction; the year seeing the maximum funding hitherto in the ecosystem.

We’ve just stepped into a new year and are all excited about what it will bring for the Indian startup ecosystem. But let’s admit it, 2018 was a truly remarkable year in more ways than one for the ecosystem — from meteoric startup growth, high-profile exits, foreign investments to international forays by Indian tech startups.

In 2019, a plethora of opportunities are awaiting Indian startups in international markets as well, considering the strengthened relations between the Indian government and the other countries such as Israel, Portugal, Japan, and the UK, among others.

According to our predictions, in 2019, funding is expected to again soar to 2017 levels, hovering at about \$13.5 Bn but through a comparatively lesser number of deals. However, the funding gap observed in 2017 and 2018 will continue in 2019, wherein a handful of startups will attract a major part of the funding and establish dominance in their markets. ■

The Youth of India should not be looking for Jobs, but creating them



Aniket Baheti
Entrepreneur-In-Residence
Peacock Solar

This golden advice from our former President & renowned scientist Dr. A.P.J. Abdul Kalam, was prescient of the situation India will soon be in. With more than 65% India's population below 35 years of age, it is projected that average age of an Indian will be 29 years by 2020 compared to 37 in China and 48 in Japan. According to a report by national magazine, India is already experiencing 6.1% unemployment rate, highest in last 45 years. Need for job creators is more compelling than ever and Government of India is consciously taking every step to promote Indian entrepreneurs in implementing their disruptive business ideas.

Ever since the announcement of Startup India program by Indian Prime minister, Shri Narendra Modi, on August 15, 2015, startup as an entity has received the limelight and recognition it aspired. Bundled with a string of incentives in terms of easy paperwork, tax exemptions and special treatment during tenders & government subsidies has enabled massive startups to shape their destiny. NASSCOM reported that more than 1200 startups came up in 2018 taking the total to 7,200 startups in India. The startups in

India saw a 108% growth in total funding from USD 2 billion in 2017 to USD 4.2 billion this year. These startups which gained momentum from 2016-17, have created 40,000 new direct jobs while there was three-fold increase in indirect jobs. I am convinced that entrepreneurship is a great service to my nation and I have dedicated my corporate job stints towards preparing myself for starting businesses. I learnt how an international business consulting firm built its organizational culture that spanned 175 years, 150 countries and 250,000 employees. I imbibed relentless customer obsession from one of the world's biggest e-commerce company. To top it all, I pursued MBA from Indian School of Business power my business acumen with contemporary academic rigor and understanding of various aspects of running a business.

I belong to a typical middle income group household where I have spent 25 years of my life without an air conditioner and accepted incessant power cuts as a norm of life. My parents, having roots from an un electrified village, have largely grown up in dark. My five month old daughter residing in urban Delhi is inhaling polluted air equivalent to

smoking 7 cigarettes a day and is susceptible to lung disorders over next 20 years.

Seeing three generations of my family succumbing to vagaries of climate change created majorly due to conventional coal-based power production & distribution appalls me. I am committed to a cleaner, greener future and firmly believe solar has the potential to sustainably meet India's energy demands. Access to clean energy is also one of the UN Millennium sustainable development goals (SDGs), touted as the highest order of challenges humans are facing around the world. Sangam Ventures is at the forefront in identifying, nurturing and growing clean tech & resource productivity startups aimed at solving challenging problems. I got an excellent opportunity work as an Entrepreneur-in-residence with Sangam to build a business around residential solar in India, something I'm very passionate about.

For the first six months, we attempted at understanding the barriers to low adoption of solar by Indian homeowners. After travelling to Jaipur, Vijaywada and Nagpur to interview 50+ households, we realized that residential solar is marred by

challenges from demand as well as supply side. High upfront cost of solar dissuaded many environment conscious homeowners from going for solar. Lack of trust and understanding about how solar works added to the alienation of households from the concept of generating clean energy at their rooftop. Low margins for installers kept them at bay from serving residential customers.

This operations heavy business required disruption using technology & analytics to bring down the cost of serving the customers. This hypothesis led to the launch of Peacock solar, a Sangam Ventures incubated startup, leveraging data analytics and technology to bring down barriers to adoption of solar by Indian homeowners. At scale, this idea will allow private finance to flow in and thereby enable more homeowners access to clean, green energy.

Since its inception, Peacock solar has piloted its operations at Kota, Rajasthan and installed more than 50+kW of small systems in its urban areas. The experience of selling high value product to India's middle income households tested our conviction and generated lot of learnings which has helped us in refining our go to market strategy. We devised new financing models for end customers and were recognized as one of the top 9 global innovative ideas in Climate Finance Lab's idea cycle of 2018. Since its inception, Climate Finance Lab ideas have mobilized more than \$1.2 billion towards sustainable development. To further our market assessment and go to market strategy, we were also awarded a grant finance by US-India Clean Energy Finance, a consortium of

CHALLENGES

Access to finance is the biggest challenge that startups are facing and Government of India can take proactive steps at enabling startups avail public finance in order to incentivize private capital to flow in. This is especially more relevant for operations heavy business ideas where even the proof of concept requires capital to be executed.

The second biggest issue is the availability of quality talent for running the startups. While capital can partially solve for this by motivating individuals to leave corporate jobs and join a startup, long term solution would require setting up quality education & training centers where more individuals are trained in critical business skills such as marketing, finance and operations. Advent of digital marketing and internet penetration has allowed startups to hire and engage with resources from across the country. Skill building via government agencies can allow them to get employed in startups across the country. Third biggest hurdle that startups face is developing clientele in the initial stages. Pilot projects, experimental initiatives and assistance in marketing products from startups help the entrepreneurs find their right product market fit and thereby develop a business to scale that up.

MNRE, OPIC and other foundations targeting to catalyze long term debt financing for distributed solar projects.

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India is at the cusp of writing a turn-around story where years of brain drain of talent from our country will now be replaced by brain-replenishment through job creation, skill development and increase in India's GDP through new avenues of goods & services offered by startups. ■

Are you Building a Business or are you stuck in the trap of Self-Employment?



Rajiv Talreja*
 Founder & MD
 Quantum Leap Learning
 Solutions



Read this article at your own risk... It is not for those who are weak hearted... Proceed only if you are willing to confront yourself and see the reality as it is. The most critical question for an entrepreneur to answer is - Do you own a business or are you self-employed?

If the buck stops at you in every function of your business i.e. marketing, sales, operations, accounts, R&D, hiring, management; then its time you confront yourself with the reality that you own a JOB, not a business!

Self-employment is a trap... a trap where you invest your time,

money, skills on a profession which is unstructured and suffers from inconsistency of effort and returns.

Think about it... most entrepreneurs suffer from what I call 'Chosen Slavery'... I won't apologize for using such strong words because the reality of most small and medium entrepreneurs pains me... No time, no money, debt, stress - and that's what they accept as the reality of being an entrepreneur!

In fact, while I start coaching small and medium business owners, what fascinates me is how joyous they are when they are

barely able to generate enough money to pay-out their monthly bills, team salaries and other overheads on time. I hear them say, "This month was good!" or "Yehmahinaachagaya" and I wonder to myself - "Did you start your business only to be able to pay out your monthly expenses on time? Or have you become so used to struggles in your business that paying out your bills on time is now a significant milestone to achieve in your business?"

There are 3 fundamental differences between being self-employed and owning a business that you should know:

* The writer is global speaker, entrepreneur and author.

S. N.	Self-Employment	Business
1.	Dysfunctional Functions: Any business has 7 functions i.e. Marketing, Sales, Operations, R&D, Accounts, Human Resources and Management. In Self-Employment, these functions are not consistently functional which only means that the entire business lacks consistency of action in these areas and the entrepreneur remains in a fire-fighting mode.	Functional Functions: In business, the entrepreneur has systems & teams in each one of the functions which keeps the business moving forward and continuously evolving. You are in business when your functions are functioning consistently and simultaneously.
2.	Operational Dependency: In Self-employment everything is dependent on the entrepreneur. Be it planning marketing initiatives, closing sales, servicing customers, handling accounts, hiring – the buck stops at the entrepreneur. This only means that the entrepreneur is constantly stuck in fire-fighting and automatically gives time, attention and focus only to the burning needs.	Strategic Growth: In business, the role of the entrepreneur is to evolve the business strategically. With teams & systems handling day-to-day operations, the entrepreneur has bandwidth to focus on strategic initiatives for growth. The entrepreneur works on the business rather than being stuck in the business, thus optimizing performance and profits!
3.	Income generation: The mind-set of a self-employed entrepreneur is restricted by the realities of fire-fighting. The victory inevitably for such an individual becomes paying salaries on time and generating a decent personal income month on month. If you think about it, taking a job is a much better option for such an individual as that ensures consistency of income and a better career path for the intelligence and drive of the person.	Wealth creation: You do not do business to earn a living, you do business to create massive wealth for yourself, for your teams and generating massive value for your customers. Business gives you the opportunity of creating wealth creation systems which are consistent, scalable and unlimited.

So the real question to ask is – Are you building a business or are you stuck in the Self-Employment trap? And if you feel that you are the business, then it's time to revisit your vision and pivot in the direction of building a business.

To start your journey on how to build a business where you are not stuck in fire-fighting, here are three things you must do:

- **Build a scalable and profitable business model:** When I see the entrepreneurship and business ecosystem today, I often see two extreme types of businesses, tech-start-ups which have a scalable business model but are unable to draw out the tipping point where the business will become profitable which according to me is dangerous because it leads to wishful thinking around increasing valuation and raising funds with no clear finish line and on the other end I see traditional businesses which have

a profitable business model but are unable to draw out the method to make the business scalable. The key is to design a business model which is at the mid-point and therefore is scalable and profitable.

- **Build a 2nd line team of leaders who are functional experts:** You need a 2nd line team who is competent enough to run your business functions without you. Without a 2nd line team, be sure that you will get sucked into day to day operations which is costly for your business.
- **Build simple systems:** The moment I mention the word 'systems', small and medium business owners start justifying saying – "Systems don't work", "Systems slow things down", "Jugaad is the best system" or "People don't follow systems" and my response to them is – "If a system is slowing things down,

then it is not a system and if a system is not simple, then it is not a system." The challenge that most entrepreneurs have is that they do not have adequate knowledge about the topic of 'systems' and their idea of systems are the traditional sciences around process building and compliance which are actually outdated and are not agile enough for a small and medium business.

Now I want you to take these 3 focus areas of building a profitable and scalable business model, building a 2nd line of leaders and building simple systems and run with them. Acquire more skills and knowledge in these 3 areas and I promise you that your game will change. Feel free to connect with me if you have questions or you need support with these three areas on my Facebook page – www.facebook.com/rajiv.talreja Stay inspired and keep pushing for the next level. ■

Start-Up Initiative in GAIL



Manoj Jain
Director (BD), GAIL



Start-Up India is a flagship Program of the Government. It was launched by the Hon'ble Prime Minister on Independence Day, 15th August 2015 with a Clarion Call 'Start-up India, Stand-up India'. Start-Ups have the potential to improve existing businesses, create new business, increase manufacturing base and create self-employment opportunities. Start-Ups can provide the much needed multiplier effect for growing the economy. In addition, Start-Ups also bring innovative solutions and fulfil the aspirational needs of the society. Thus promotion of Start-Ups fosters innovation in Technology and also provides socio-economic benefits.

The Start-Up India Program intends to build a strong eco-system for nurturing Start-Ups to drive

Innovation, Sustainable economic growth and generate large scale employment opportunities. Government Policies are increasingly giving a push to encourage Start-ups and various fiscal incentives are also being extended to Start-ups. The Government's special focus on Start-Ups has given a boost to the Start-Up ecosystem in the country. As a result, India has seen a tremendous increase in the number of Start-Ups launched in recent years. This has led to India becoming one of the biggest Start-up hub. This has also resulted in huge inflow of foreign funds as well as development of numerous Incubation centres across the country. Various entities are now coming forward to participate in this new initiative by providing funds, infrastructure, mentoring etc.

Beginning of Start-Up Initiative in GAIL

As a responsible corporate, GAIL has taken up an Initiative to invest and nurture Start-Ups to help them grow into sizeable businesses. We in GAIL see Start-Ups as an exciting and effective medium to transform GAIL into a Technology and Innovation driven organization and play our role in creating a Start-up nation. The

Mission of GAIL's Start-Up initiative is to identify, invest and nurture Start-Ups that can become successful companies in the long run. GAIL has created a corpus of Rs. 50 crores for investing in Start-Ups. GAIL has christened its Start-Up Initiative as "Pankh" (meaning 'Wings'). This symbolizes that our support to the nascent Start-Ups will give them 'Pankh' to be successful in their business venture and soar high in the Corporate World.

Policies & Procedures

Investment in Start-Ups is a new endeavour for GAIL and it requires a different approach as compared to conventional way of doing Business and Decision making to achieve the desired objectives. On one hand, Start-Up investment decisions require nimble footed-ness and subjective assessments, while on the other hand prudent decision making is required as it involves public money.

Therefore to address this twin requirement and allow a balanced approach to facilitate investment in Start-Ups and to achieve success in this endeavour, GAIL has formulated a Start-Up Policy and Process Manual. The Start-Up

Policy provides the broad framework of taking up work in this Initiative and the Process Manual provides detailed procedures and methodology for implementing the Start-Up Policy.

Launch of Start-Up initiative

GAIL launched “Pankh” on July 25, 2017. We are investing in Start-Ups in our Core Areas as well as few non-core Areas like Health, Social, Security & Environment.

Process of Selection of Start-Ups

GAIL follows a transparent mechanism to Solicit, Screen, Evaluate and Select Start-Ups for investment. We invite Investment Proposals from Start-Ups through our web-portal specially developed for the purpose. These are then screened for Completeness of documents like Certificate of Incorporation, Start-Up Certificate etc. The Start-Up should also be operating in the Areas identified by GAIL for the purpose. This is followed by detailed screening on various parameters like profile of Promoters and important team members, Size and Growth rate of Market, Time to Profit, IPR, Risk etc.

The short-listed Start-Ups are put up for Evaluation by a Committee on Start-Ups. This Committee has few external members like Head of an Incubation Centre, Founder of a successful Start-Up, Management Consultant etc. These experts bring with them the necessary domain expertise which is required to evaluate a Start-Up on different parameters. The Committee discusses the Investment Proposal with the founders of each Start-Up and submits its Recommendation to

GAIL. Subsequently, we carry out a Valuation of the Start-Up through a Merchant Banker to ascertain the correct entry point for GAIL's investment.

It is reported that 80% of the Start-Ups fail within 5 years of starting. However, the few Start-Ups that succeed can provide tremendous financial returns and more than cover the losses from the unsuccessful Start-Ups. We feel that our robust mechanism for selecting Start-Ups shall help us to identify the best Start-Ups and improve the probability of success.

Progress so far

GAIL has carried out 3 rounds of Solicitation till Jan'2019 and has selected 18 Start-Ups for Investment with a commitment of over Rs. 25 crores. Another 10 Start-ups are being considered for Investment and their Valuation is presently in progress.

GAIL has also signed MoU's with IIT Madras Incubation Cell and IIM Lucknow Incubation Centre. As part of these MoUs, GAIL can match the investment made by these Incubation Centres in Start-Ups working in GAIL's focus areas. Our Start-Ups are working in diverse areas like Logistics, Electric Vehicle, Nutrition, Rural Development etc. It is heartening to note that few of our Start-Ups have bagged prestigious Awards from various agencies. Few of our Start-Ups who were already



earning revenue have reported a good increase in revenue and few others have just launched their Products / Services in the market place. All of these Start-Ups have facilitated self-employment opportunities for their Founders and have also generated direct and indirect employment for many others.

Conclusion

Achieving success by the Start-Ups in the commercial arena is not an easy task and requires a combination of (i) Good idea, (ii) Manufacturing skill, (iii) Marketing acumen (iv) Offering distinct advantage to the consumers vis-à-vis competition and (v) Ability to scale-up. Investment in Start-ups by GAIL is just the beginning in their road towards success which will be full of challenges. GAIL is preparing itself to provide hand holding and mentoring to our Start-Ups in their journey and shall be trusted partner of its Start-Ups.

We wish to see our Start-Ups cross the threshold revenue of Rs. 25 crores and graduate to Medium Enterprises in the near future. With the kind of efforts and passion that we have put in this endeavour we are hopeful to get good results for the benefit of GAIL and the country. ■

SCOPE and PSEs Pay Homage to Mahatma Gandhi;

Organizes Lecture on Mahatma Gandhi and Transformational Leadership

SCOPE Gandhian Forum for Ethical Corporate Governance organized a lecture session on “Mahatma Gandhi and Transformational Leadership” to commemorate the 71st Martyr’s Day on 30th January, 2019 at SCOPE premises. Mr. Ved Prakash, Chairman, SCOPE & CMD, MMTC, Dr. U.D. Choubey, Director General, SCOPE and eminent Gandhian Smt. Shobhana Radhakrishna addressed the august gathering.

During the welcome address, Dr. U. D. Choubey highlighted the role of ethics and truth in daily conduct that Mahatma preached. He said that ethics, transparency, accountability are the tenets for any organization to succeed. DG, SCOPE added that the ethical conduct does not only rests on an organization’s shoulder, but it is the role and responsibility of each employee to conduct themselves in best ethical manner. While addressing the gathering, Mr. Ved Prakash



Mr. Ved Prakash, Chairman, SCOPE & CMD, MMTC, Dr. U. D. Choubey, Director General, SCOPE and eminent Gandhian Smt. Shobhana Radhakrishna releasing the special issue of KALEIDOSCOPE Magazine.

spoke at length about Mahatma Gandhi’s tribute in the making of the country. He said that everyone should study Mahatma to gain insight into his life. Only by doing so, he added, a person can understand the values that Mahatma stood for. Chairman, SCOPE said in this era of darkness, Mahatma Gandhi stood as the beacon of truth and ahimsa. Smt. Shobhana Radhakrishna in her address expressed her

gratitude toward SCOPE for establishing SCOPE Gandhian Forum for Ethical Corporate Governance to commemorate the teachings of Mahatma Gandhi and to bring good corporate governance practices in Public Sector Enterprises. She also remembered Mahatma on the occasion and said that the relevance of Gandhi is for eternity as we can learn from him during every course of our lives. On the occasion, dignitaries



Mr. Ved Prakash, Chairman, SCOPE (on left) and Dr. U. D. Choubey, Director General, SCOPE (on right) paying floral tribute to the Father of the Nation.



(L to R) Mr. Ved Prakash, Chairman, SCOPE, Dr. U. D. Choubey, Director General, SCOPE and eminent Gandhian Smt. Shobhana Radhakrishna addressing the program.

released special issue of Kaleidoscope Journal on “Gandhian Philosophy on Governance and Ethical

Practices in CPSEs”. Employees of SCOPE and PSEs also paid floral tribute to the Father of the Nation.

SCOPE organizes program on Enhancing Managerial Effectiveness

Standing Conference of Public Enterprises (SCOPE) organized a two day program on “Enhancing Managerial Effectiveness” at SCOPE Convention Centre on 30th & 31st January, 2019. Mr. Ved Prakash, Chairman, SCOPE & CMD, MMTTC, Mr. B. V. N. Prasad, CMD, Cement Corporation of India (CCI), Dr. U.D. Choubey, Director General, SCOPE and Prof. (Dr.) S. P. Chauhan, Director, Asia Pacific Institute of Management (APIM) addressed the inaugural session. The program was conducted to help the public sector executives develop the core managerial competencies for enhancing their effectiveness and energise the participants to achieve higher levels of performance.

While welcoming Dr. U. D. Choubey, DG, SCOPE said that a manager should be aware of the environment viz. socio-economic development, trade practices including skill development among others around the organization as well as country and the world. Chairman, SCOPE, Mr. Ved



Mr. Ved Prakash, Chairman, SCOPE, Dr. U.D. Choubey, Director General, SCOPE, Mr. B. V. N. Prasad, CMD, Cement Corporation of India and Prof. (Dr.) S. P. Chauhan, Director, Asia Pacific Institute of Management during the inaugural session of the program.

Prakash in his address highlighted the role of positive attitude in success of a manager. Talking about the traditional skill sets, he added that Human Relations Management and Soft Skills can help in achieving the ultimate goal. CMD, CCI, Mr. B.V.N. Prasad in his address emphasized on Human Resource Development and development of positive attitude besides soft skills. The inaugural session was followed by a session on Essential Principles for Managerial Effectiveness which was conducted by Dr. S. P. Chauhan. The session was followed

by sessions on Understanding Self & Others and Developing Positive Attitude. Day two began with the session on Developing 360 Degree Interpersonal Relationships for Higher Performance by Dr. Surabhi Goyal. Dr. Goyal's session was followed by session on Developing Emotional Intelligence and Leading Teams Effectively by Dr. S. P. Chauhan. Mr. B.V.K.K.Rao was the program facilitator and Ms. Hema Koul gave the vote of thanks. The program was attended by large number of Senior Executives from PSEs.

Conference Facilities at SCOPE Convention Centre

The centrally air-conditioned SCOPE Convention Centre at SCOPE Complex, Lodhi Road, New Delhi provides excellent conference facilities to PSEs, Govt. Departments, Autonomous Bodies, Institutions/NGOs etc. The Auditorium and other Conference Halls are equipped with projector and screen facilities, sound & light control room with recording & P.A. facility, etc. Details of the capacity of the Auditorium and other Halls, which are available on nominal tariff are given below.

Auditorium



The Auditorium having capacity of 310 persons (300 Chairs + 10 Nos. Chairs at stage) capacity equipped with mikes on dias and podium on stage.

Mirza Ghalib Chamber



The chamber having capacity of 108 persons (102 Nos. Chairs + 6 Nos. Chairs on Dias) equipped with mikes on table, dias and podium.

Tagore Chamber



The chamber having capacity of 92 persons (86 Nos. Chairs + 6 Nos. Chairs on Dias) equipped with mikes on dias, tables & podium.

Bhabha Chamber



The chamber having capacity of 44 persons (24 Nos. Chairs on round table and 20 Nos. Chairs on sides) equipped with mikes on dias, tables & podium.

Fazal Chamber



The chamber having capacity of 25 persons (15 Nos. Chairs on round table and 10 Nos. Chairs on sides) capacity with board room type sitting arrangement equipped with mikes.

Business Centre



The Business Centre having capacity of 7 persons equipped with multi point Video Conferencing System (1+3), at three locations at a time for National & International both.

Banquet Hall



The banquet hall having capacity of 500 Persons for the purpose of lunch & dinner. Sitting arrangement could be done for 90 persons.

Annexe I



The Annexe-I having capacity of 25 Persons.

Annexe II



The Annexe-II having capacity of 25 Persons.

Tansen Chamber at UB



The Tansen Chamber having capacity of 50 persons having stage and podium.

Amir Khusro Chamber at UB



The Amir Khusro Chamber having capacity of 50 persons having facility of stage and podium.

For Booking & Tariff details please contact

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New and Improved Conference Facilities at SCOPE Minar Convention Centre

SCOPE Minar, an architecturally conceived in the form of two high rise curvilinear tower blocks sitting on a four storey circular Podium Block, is strategically located in Laxmi Nagar District Centre, Delhi -110092 and housing around 40 PSEs of repute. It is one of the known buildings of East Delhi. It has a very size Reception Foyer giving ambience look inside the building. There is a green environment all around the SCOPE Minar with large size planters all around. The building is also having state of art Convention Centre, comprising four halls i.e.

Convention Hall



A large sized Convention hall having sitting capacity of 300 delegates. Various seminars, training programmes, presentations, get together etc. are conducted in Convention Hall. It provides ambient and peaceful environment for the programmes.

VIP Lounge



VIP Lounge having sitting capacity of 40 delegates. The executives and higher level officers, Directors, CMDs can use it as waiting lounge also.

Board Room



Board room having “U” shaped table, with a sitting capacity of 55 delegates with modern facilities - projector, screen, table mic etc.

SCOPE Academy of Public Sector Enterprises



SCOPE Academy of Public Sector Enterprises (APSE) conducts induction level programmes for PSEs executives. It has three training halls, one with capacity of 40 persons and two halls with capacity of 30 persons each for training purpose.

Meeting Hall



Meeting hall having “U” shaped table, with a sitting capacity of 60 delegates. Most widely used for small size meetings and training programmes, group discussion, power point presentations etc.

There is a wide space for vehicle parking that cater for a capacity of 550 cars, including the newly built good quality Banquet Hall wherein 300 delegates can comfortably dine at a time, makes it special to deliver an all-round conducive meeting environment .

For Booking & Tariff details please contact

Mr. M. L. Maurya, GM (Tech.) (M) 9313375238 **and Mr. Shubh Ratna**, Dy. GM(Engg.), SCOPE Minar (M) 9873398242, (O) 011-22458176, 22458178 • Email: scopeminar.convention@gmail.com • shubhratna@yahoo.co.in

SCOPE Forum of Conciliation and Arbitration (SFCA)



SCOPE had set up an Arbitration Cell known as SCOPE Forum of Conciliation and Arbitration (SFCA) mainly to settle disputes between PSUs and its associates. This was inaugurated on 9th January, 2004 by Shri Santosh Gangwar, the then Hon'ble Minister of State for Heavy Industries, Public Enterprises and Parliamentary Affairs, which was attended by the then Secretary, Ministry of Heavy Industries and Public Enterprises, Joint Secretary, DPE, CMDs and other senior officers of Govt. of India and PSUs.

SFCA has framed its own rules prescribing consolidated fee structure and expenses with the assurance that arbitration proceedings shall be completed in the shortest possible time and shall be more economical in comparison to other institutions. A panel of expert Conciliators and Arbitrators has also been drawn which consists of retired Judges

of Supreme Court, High Court, retired Secretaries, Joint Secretaries of Govt. of India, Chief Executives, Directors and senior officials of Govt. of India and PSEs, besides Advocates and C.As and other professionals.

The Forum has its own infrastructure with a spacious Arbitration Hall having sitting capacity of 15 persons with all the modern facilities such as projector for live projection of record of proceedings on a large screen with free service of mineral water, tea/coffee and biscuits. High tea and lunch can also be arranged by the Forum on request in advance at the cost of the parties by authorised caterer of SCOPE.

PSUs are requested to advise the concerned officials to avail facilities of the Forum and refer cases to SCOPE Forum of Conciliation and Arbitration (SFCA).

For further details please contact

Mr. M. L. Maurya
General Manager (Technical)
(M) 9313375238

Ms. Radhika
Executive - Legal (SFCA)
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e-Mail: scopesfca@gmail.com

For booking and tariff details please contact

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(M) 9891781484, 24365739
e-Mail: sfcascopes@gmail.com

STANDING CONFERENCE OF PUBLIC ENTERPRISES

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PM lays Foundation Stone for the Extension of Terminal Building at Surat Airport in Gujarat

The Foundation Stone of the extension of Terminal Building of Surat Airport in Gujarat was laid by the Prime Minister recently. The foundation stone laying ceremony took place in the presence of Mr. Vijay Rupani, Chief Minister, Gujarat and other esteemed dignitaries.

AAI under the supervision of the Ministry of Civil Aviation is committed to provide air connectivity and develop and upgrade airport infrastructure across the country. Due to the proactive measures being undertaken by the Government, India is already one of the fastest growing civil aviation markets in the world.

The terminal building of Surat Airport is being extended by the Airports Authority of India, at the cost of Rs. 354 Cr. The



Mr. Narendra Modi, Prime Minister laid the Foundation stone for Extension of Terminal Building at Surat Airport by unveiling the plaque in the presence of Mr. Vijay Rupani, Chief Minister, Gujarat and other dignitaries.

existing Terminal Building having an area of 8474 sqm will be extended by additional 17046 sqm. (excluding City Side and air side kerb) to have a total area of 25,520 sqm. After the extension, the terminal building will be capable to handle (1200 Domestic + 600 International) i.e. 1800 passenger during the peak hours.

Surat Airport then, will be able to handle 2.6 million passengers annually. Surat Airport is soon going to feature on global aviation map with flights connecting to international destinations. The New Extended Terminal Building of Surat Airport will give impetus to the growth and economic prosperity of the region. ■

NFL to set up three Seed Processing Units



In order to create own infrastructure for processing seeds, NFL has signed an agreement with Central Warehousing Corporation (CWC) to construct Seeds Processing Units at Indore, Bathinda and Panipat. The agreement was signed in the presence of Mr. Manoj Mishra, CMD, NFL, Mr. V. N. Datt, Director (Marketing), NFL, Mr. S C Mudgericar, Director (Marketing), CWC besides senior officials of both the companies. Each processing unit will be of 4400 MT capacity and will together process 1.20 Lakh quintal seeds annually. ■



भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

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(A Miniratna Category -1 Public Sector Enterprise)

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अंतरराष्ट्रीय मापदंड के साथ
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23 अंतरराष्ट्रीय हवाई अड्डे (3 सिविल एन्क्लेव तथा 3 संयुक्त उपक्रम हवाई अड्डे) International Airports (3 Civil Enclaves & 3 Joint Venture Airports)	+	08 कस्टम हवाई अड्डे (4 सिविल एन्क्लेव) Custom Airports (4 Civil Enclaves)	+	78 अन्तर्देशीय हवाई अड्डे Domestic Airports	+	20 अन्य सिविल एन्क्लेव Other Civil Enclaves	=	129 हवाई अड्डे Airports
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PSEs Celebrate **70th Republic Day**

BEML Celebrates 70th Republic Day

BEML Ltd. celebrated India's 70th Republic Day with zeal, enthusiasm and sprit of patriotism.



Mr. Deepak Kumar Hota, CMD, BEML saluting the National Flag at Republic Day Celebration.

Mr. Deepak Kumar Hota, CMD BEML unfurled the National Flag and received the Guard of Honour from security personals, NCC, Scouts and Guides and addressed the gathering at BEML KGF Complex. The occasion was also marked by unfurling the Tri Colour at all BEML units.

The various events of the day included march-past by security personals, cultural shows and distribution of fruits to the patients at Medical Units.

BHEL celebrates 70th Republic Day with fervour

India's 70th Republic Day was celebrated with fervour and gaiety by BHEL at all its offices across the length and breadth of the country. Mr. Atul Sobti, CMD, BHEL unfurled the Indian tricolour at an



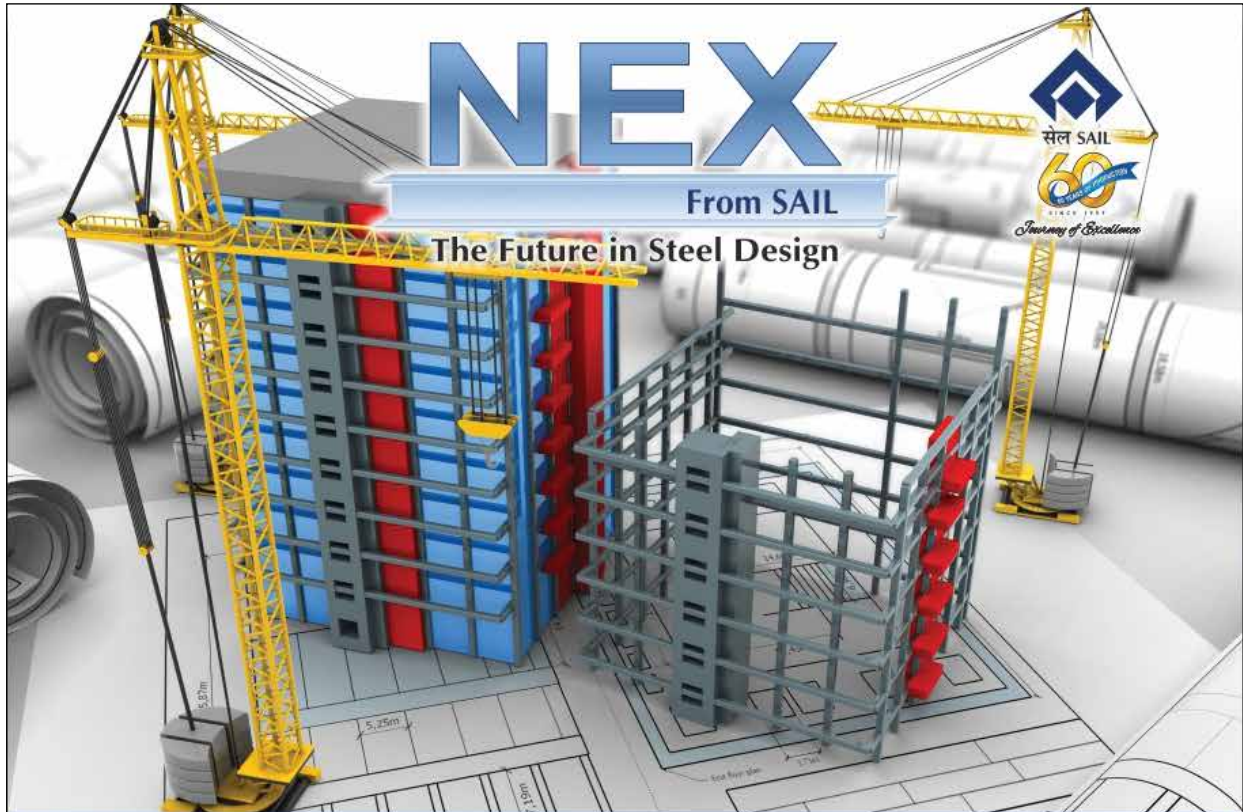
Mr. Atul Sobti, CMD, BHEL addressing the Republic Day function at BHEL township in Noida.

impressive function at BHEL's township, Noida. He addressed a large gathering of BHEL employees and their families. A march past and cultural programme was also organised on the occasion.

Republic Day Celebrations at Cochin Port Trust



Dr. M. Beena, IAS, Chairperson, Cochin Port Trust hoisted the National Flag and addressed the gathering on the occasion of Republic Day. CISF personnel and family members performed cultural programmes.



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SHARAD



ITDC felicitates National Brave hearts at Purana Qila; Organizes an Exclusive Screening of Son Et Lumiere (Sound & Light Show) 'Ishq-e-Dilli'

Sound & Light show takes the recipients of National Bravery Award winners through a 1000 years' journey of the capital



Mr. Piyush Tiwari, Director (C&M) with National Bravehearts at Purana Qila.

The incredible children, who were bestowed with National Bravery Awards coming from different parts of the country, were welcomed and invited to an exclusive screening of spell bounding Sound and Light show run by India Tourism Development Corporation (ITDC) Ltd at Purana Qila, New Delhi. The Children received the National Bravery awards, for their outstanding acts of courage and tact, by Shri Ram Nath Kovind, Hon'ble President of India.

ITDC screened the incredible 1000 years journey of rise and fall, shaping of the capital city 'Delhi' through mesmerizing Sound & Light show 'Ishq-e-Dilli' for the brave hearts. Present on the occasion were Mr. Piyush Tiwari, Director (Commercial & Marketing), ITDC; Mr. Ravi Pandit, Vice President, Engineering, ITDC; Mr. Suresh Chandra, Head, Sound & Light Show Division, ITDC and other officials from the organization.

Speaking at the felicitation ceremony, Mr. Piyush Tiwari, Director (Commercial & Marketing), ITDC said, "It is a proud moment to be among and interact with youth of India, whose hearts are filled with vigor and righteous courage to choose and do right at such tender age. These young Indians have showcased highest level of humanity by valuing others life and fighting their fears to protect others. They are real heroes of our nations. It is indeed an honor for ITDC family to host and meet these extraordinary children at the Son Et Lumiere (Show)".

MCL celebrates 70th Republic Day with patriotic fervour

Mr. J. P. Singh, Director (T/OP), Mahanadi Coalfields Ltd. , unfurled the Tricolour and greeted everyone as flagship subsidiary of Coal India Ltd. celebrated 70th Republic Day with patriotic fervour and gaiety. He also took salute of 25 contingents of smartly marching contingents of Security personnel, NCC cadets, Scouts and Guides, Jagriti Mahila Mandal's Laddli girls and various schools of Sambalpur.



Mr. J. P. Singh, Director(T/Op), MCL taking salute from the security personnel during the Republic Day function.

Chief Vigilance Officer Mr. Munwar Khursheed, IRPF, Mr. O. P. Singh, Director(T/P&P), Mr. K. R. Vasudevan, Director(F) & Director(P) - Additional Charge, Vice President Jagriti Mahila Mandal Ms. Paramjit Kaur along with Ms. Naushina Afrina Ali, Vice-Presidents, Ms. Padmaja Singh, Vice President and Ms. Padmini Vasuevan,



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MEETING SOCIETY'S NEEDS GLOBALLY



Vice-President, JMM were prominent among large number of people participated in the celebrations. Colourful patriotic dance drama presentations by school children drew huge applause from people. Winners of march-past and cultural programme were also given prizes.

Republic Day Celebration at MDL

Mazagon Dock Shipbuilders Limited celebrated the 70th Republic Day with great fervor on its premises. Cmde Rakesh Anand, IN (Retd.), CMD, Mazagon Dock Shipbuilders Limited hoisted the National Flag and inspected the guard of honour presented by the CISF, MDL Fire Brigade and MDL Security contingents on the occasion. The ceremony was attended by MDL Directors, and other senior officials along with their families.



Cmde Rakesh Anand, CMD, Mazagon Dock Shipbuilders Limited, hoisting the National Flag on the 70th Republic Day celebrations.

Cmde Rakesh Anand, CMD, MDL addressed the gathering and presented awards to CISF personnels for their exemplary work.

NALCO Joins the Nation in Celebrating 70th Republic Day by Reaffirming its Commitment for Dibyangs

NALCO joined the nation in celebrating the 70th Republic Day with traditional pomp and ceremony. On the occasion, "Divyangs" were invited to perform a cultural programme and were also felicitated by Dr. Tapan Kumar Chand, CMD. The year 2019 has been declared by NALCO as the year of "Caring & Sharing" and in line with that NALCO shall be taking up a series of interventions to firmly stand with the less privileged people, said Dr. T. K. Chand. He added that NALCO shall become the title sponsor of the Ajit Wadekar Memorial East Zone Dibyang Cricket Tournament-2019, which will be held at Bhubaneswar.



After unfurling the national flag, Dr. Tapan Kumar Chand, CMD, NALCO said, "Nalco is a mini India with people belonging to different segments of the country, striving continuously towards making this Navratna PSU, the pride of the Nation." He further said, "Since inception, NALCO has aimed to be a global leader and since 2015 it has started achieving global benchmark in Bauxite & Alumina production. Opening of Utkal-D coal mines will bring a turnaround in Aluminium production and will enable the company to climb the global scale.

Thousands of years ago green turned black deep inside Mother Earth. And today, we mine with the thought of returning green back to her.



* An original picture of plantation on OB dump in Lakhanpur open cast mine of MCL.

Some of our efforts in a bid to turn Coalfields into 'Green Fields' are.....

- Planting over 5.15 million trees in and around MCL's command area in Odisha.
- Being the 1st company to introduce Eco-friendly Surface Miner In 1999, which completely eliminates drilling, blasting and crushing operations in mining of coal.
- Installing Mobile Water Sprinklers, Fixed Automatic Sprinklers, Instant Showering Systems and Mist Spraying arrangements at CHP to reduce air pollution.
- Treating industrial waste water in Mine Discharge Treatment Plant and introducing Sedimentation ponds, oil & grease traps in workshops and domestic effluent treatment plant in colonies to help minimise pollution.



ମହାନଦୀ କୋଲ୍‌ଫିଲ୍ଡ୍‌ସ୍ ଲିମିଟେଡ୍
महानदी कोलफील्ड्स लिमिटेड
Mahanadi Coalfields Limited
(A subsidiary of Coal India Limited)

Corporate Office: Jagruti Vihar, Burla, Sambalpur, Odisha - 768 020, www.mahanadicoal.in



'Saras' Set to Fly High for R&D in NCL: Mr. P. K. Sinha NCL Celebrates 70th Republic Day with Fervour

Aimed at strengthening research & innovation capabilities of the company, NCL will start a research centre- SARAS (Science & Applied Research Alliance & Support). Aligned with one of the top national priorities of present times- the innovation- SARAS will help company build a robust innovation framework for works related to mining, environmental conservation and CSR.



Mr. P. K. Sinha, CMD, NCL inspecting the parade.

Mr. P. K. Sinha, CMD, Northern Coalfields Limited (NCL) said this recently. Mr. Sinha was addressing the central celebration of nation's 70th Republic Day as chief guest at Singrauli Stadium located at NCL Headquarters. Mr. Sinha hoisted national flag and inspected the parade on this occasion. On this occasion, Director (Technical/Operations) Mr. Gunadhar Pandey, Director (Technical/ Project & Planning) Mr. P. M. Prasad, Director (Finance) Mr. N.N.Thakur, NCL JCC member Mr. Hiramni Yadav, CMOAI President Mr. Tarkeshwar Prasad, President, Kriti Mahila Mandal Ms. Sangita Sinha and Vice President Ms. Pratima Pandey and Ms. Nilu Thakur were present as guests of honour.

CMD Mr. P. K. Sinha while greeting everyone on the occasion 70th Republic Day said that NCL is committed to ensuring energy security of the nation

and is producing 15 percent of total coal production of the nation. It is NCL's coal which helps generate around 10 percent of total electricity generated in the country. Simultaneously, NCL has made a budget of about Rs 28.37 cr. to contribute to the 'Transform Singrauli' initiative run by the district administration for rapid and overall development of Singrauli district. Under the initiative, NCL is working on 136 projects of development in areas like education, health, infrastructure development in 49 gram panchayats and municipal wards. As a result of incessant efforts of the company, Singrauli District has now ascended to 13th position from the position of third last in the list of aspiring districts released in last January.

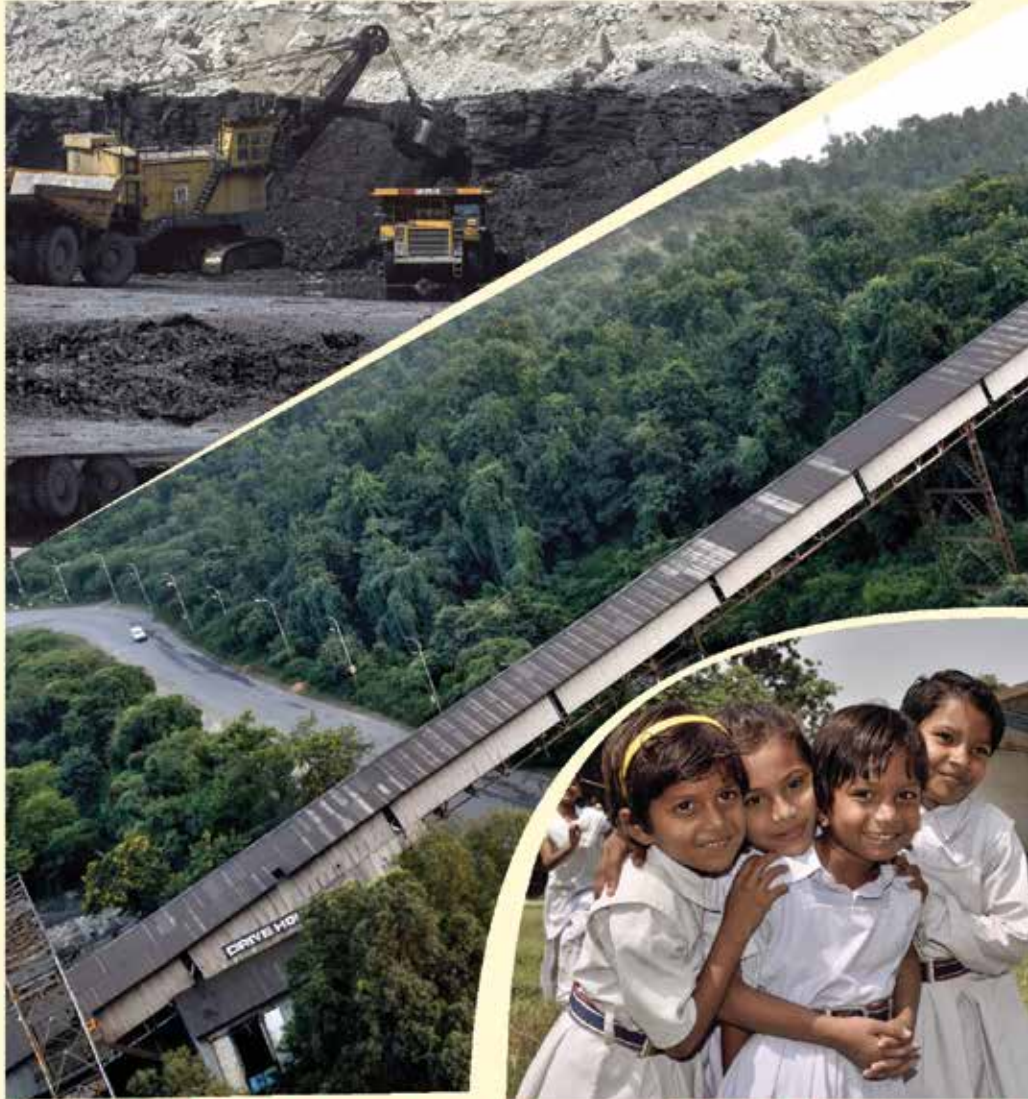
Oil India Limited celebrates 70th Republic Day



Mr. Biswajit Roy, Director (Human Resources and Business Development), Oil India Limited, delivering the Republic Day address before the audience at Oil India Limited's Corporate Office in Noida.

Oil India Limited (OIL) celebrated the 70th Republic Day of the country, with full zeal and vigour, at its Corporate Office in Noida. Mr. Biswajit Roy, Director (Human Resources and Business Development), Oil India Limited, unfurled the National Flag amidst the singing of the National Anthem by OIL's employees and their families, in the presence of Dr. P. Chandrasekaran (Director-Exploration and Development) and senior officials of OIL. Mr. Roy, addressed the audience gathered for the event. In his Republic Day address he highlighted the importance of securing energy security for the nation. The Republic Day speech was followed by the patriotic musical performances by school children. ■

"Ensuring Energy Security with Inclusive Growth"



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(A Miniratna Company & Subsidiary of Coal India Limited)

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CIN : U10102MP19856O1003160

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Award and Accolades to PSEs

AAI wins the Best Performance Award among PSUs in electronic tendering

Airports Authority of India has recently been awarded as Best Performer among Central Public Sector Units based on electronic tendering carried out in the year April 2017- March, 2018 through Central Public Procurement Portal of NIC, Ministry of Electronics and Information Technology (MeitY). Mr. I. N. Murthy, Member (Operations), AAI received the Best Performance Award from Secretary, Ministry of Electronics and Information Technology (MeitY), on the occasion of 2nd National Workshop on Central Public Procurement Portal organized by NIC. AAI is committed towards contributing GOI's vision to transform India into a digitally empowered society and make government procurement simplified, transparent and result-oriented. AAI has published 5,304 number of tenders on CPP Portal during the year 2017-18 and the total value of tenders was Rs. 17,017.5 Cr.



Mr. I. N. Murthy, Member (Operations), AAI receiving the Best Performance Award in electronic tendering among PSUs on AAI's behalf by Secretary, Ministry of Electronics and Information Technology.

The workshop was inaugurated jointly by Secretary, MeitY and Secretary, Department of Expenditure in the presence of senior officers of NIC. During the inaugural speech, Secretary, MeitY presented the overview of the CPP Portal and invited feedback from all the participating stakeholders for improvement of CPP Portal.

BEML Bags Horticultural Award



Mr. K. V. Ramakrishnappa, Head Horticulture Dept. BEML, receiving the awards.

BEML Ltd. bagged highest number of awards in the Republic Day Horticultural Show 2019 organised by the Dept. of Horticulture, Govt. of Karnataka and Mysore Horticultural Society, Lalbagh, Bangalore.

At a function held at Lalbagh, Bangalore, BEML received 73 first prizes in the Garden competitions. In addition to five Special mementos and 21 Cups for well maintained ornamental gardens at BEML Soudha, BEML Houses, BEML Bangalore, KGF and Mysore Complexes. BEML is committed to maintain the greenery in all its surroundings with due emphasis on protecting the environment.

PFC Wins Award



Mr. N. B. Gupta, Director (Finance), PFC receiving the "CA-CFO - Public Sector" Award.

Reaching Out – Spreading Smiles

It is a promise that NLC India has faithfully
Fulfilled since 1962



Development means disruption. It is a tribute to the wisdom of our founders that they embrace the needs of those who gave up an entrenched way of life for the success of the project. Through opportunities and nurturing, NLC India also ensured a new life for those who made Neyveli their new home. This was at a time when the concept of Corporate Social Responsibility had yet to take root. In the ensuing years, even though its core activity continues to be Mining and Power Generation, NLC India has established a template for CSR that has set the norms for other organizations also & realize the symbiotic power of society for the growth of their own enterprises.

CSR initiatives in peripheral areas :

- ◆ Drinking water facilities for surrounding villages
- ◆ Creating irrigation infrastructure covering 20,000 acres.
- ◆ SNEHA an institution for Special children and VAIGAI for poor women and the elderly.
- ◆ Unit established for making Jaipur type artificial limbs.
- ◆ Free medical camps.
- ◆ SHRAVANEI a school for speech and hearing impaired setup.

Highlights of NLC India's Welfare Initiatives

- ◆ Township with over 21000 houses for employees.
- ◆ Medicare coverage along with 350 bed modern hospital and peripheral dispensaries.
- ◆ Healthcare in educational institutions.
- ◆ Women Empowerment Centres
- ◆ Smart Schools
- ◆ Recreation facilities - Clubs and Swimming Pools of International Standards
- ◆ Sporting infrastructure.
- ◆ Post-retirement medical benefits.
- ◆ Creche and Play School for children



NLC India Limited

(formerly Neyveli Lignite Corporation Limited)
'Navratna' - Government of India Enterprise
Neyveli - 607 801, Tamilnadu, India,



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EXECUTING THE VISION OF INDIA



Mr. N. B. Gupta, Director (Finance), Power Finance Corporation (PFC) has won award in the 12th ICAI's "Leaders & Business Excellence Awards" for his dynamic and outstanding leadership. Mr. Gupta received the award from Mr. Vijay Goel, Minister of State of Parliamentary Affairs and Statistics & Programme Implementation held recently in Mumbai attended by eminent members of the industry.

Mr. N. B. Gupta was declared winner in the category, "CA CFO-Public Sector" by a Jury under chairmanship of Mr. Keki Mistry, Vice Chairman and CEO, HDFC.

GM (HR), IREDA conferred with 'Best HR Professional of the Year' award



Dr. P. Sreenivasan, GM (HR&CSR), IREDA receiving the award from Dr. Virendra Kumar, MoS for Women & Child Development.

Dr. P. Sreenivasan, GM (HR & CSR), Indian Renewable Energy Development Agency Ltd. (IREDA) received the 'Best HR Professional of the Year' award by HR Association of India.

The award was presented by Minister of State for Women & Child Development, Dr. Virendra Kumar in the presence of The Ambassador-designate of the Lebanon, Mr. Rabie Narsh to Dr. P. Sreenivasan in an award ceremony held recently in New Delhi.

NRDC Bags Governance Now PSU Award

National Research Development Corporation (NRDC), an Enterprise of DSIR, Ministry of Science and Technology, has been awarded the Governance



Dr. H. Purushotham, CMD, NRDC, Dr. Naresh Kumar, Sr. Manager (CC) and other NRDC officials receiving the award from Mr. Manoj Tiwari MP & Ms. Poonam Dhillon, Veteran Bollywood actress.

Now PSU Award for its excellent outreach communication efforts to its Stakeholders at a function attended by large number of CMDs/MDs/Directors of CPSEs at New Delhi recently. The Award was received by CMD, Dr. H. Purushotham, Dr. Naresh Kumar, Sr. Manager (Corporate Communication) and other NRDC officials from Mr. Manoj Tiwari, Member of Parliament and Ms. Poonam Dhillon, Veteran actress of Bollywood.

HSL bags 'Resilient Growth' Award

Hindustan Shipyard Ltd (HSL) was bestowed with 'Governance Now' award in the category of 'Resilient Growth'. The Governance Now awards felicitation ceremony was held in New Delhi recently. RAdm LV Sarat Babu, NM, IN (Retd.), C&MD HSL along with his team received this



RAdm L. V. Sarat Babu, NM, IN (Retd) CMD, HSL receiving the award from Mr. Manoj Tiwari, MP & Ms. Poonam Dhillon, veteran Bollywood actress.

Breaking new ground with cutting edge technology



NMDC - Striding towards the Future

Ranked amongst India's topmost companies in terms of its robust financials, NMDC's eco-friendly, scientific and safe mining operations have earned recognition for it not just as the world's lowest cost producer of iron ore, but also as the leader in its category. In step with the changing times, NMDC Ltd., has shifted from being a single commodity, single customer and limited mining operations to supplying multiple commodities to several customers across distant geographical locations.



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award from Member of Parliament Manoj Tiwari, Ms. Poonam Dhillon, veteran Actress and Social Activist and Mr. Markand Adhikari, Managing Director, SAB Group.

Under the leadership of the incumbent C&MD, RAdm LV Sarat Babu, NM, IN (Retd.), the shipyard has shown a remarkable turnaround by posting profits continuously for the last three years for the first time in the last 40 years, despite the prevailing gloom in the shipbuilding business scenario. With the best productivity measures and improved morale, an operating profit of Rs 69.80 Cr and turnover of Rs 644.78 Cr was achieved in fiscal 2017-18 which are the highest since inception of the company.

Oil India Limited bags award for Strategic Investment

Oil India Limited (OIL), India's second largest National Exploration and Production Company, won the Governance Now PSU Award-2016 under the category of Strategic Investment (Navaratna) at



Mr. Biswajit Roy, Director (HR&BD) receiving the Governance Now PSU Award from Mr. Manoj Tiwari (Member of Parliament- North-East Delhi) in the presence of renowned actress Ms. Poonam Dhillon.

the award ceremony held in New Delhi recently. The award was presented by Mr. Manoj Tiwari, Member of Parliament (North-East Delhi) to Mr. Biswajit Roy, Director (Human Resources and Business Development), OIL in the presence of renowned Bollywood actress Ms. Poonam Dhillon and other dignitaries. ■

Issue of US\$ 550 million 5.125% Fixed Rate Senior Unsecured Reg S Bonds due 2029 by Oil India Limited



Oil India Limited (OIL) has issued US\$ 550 million 5.125% Bonds of 10-year tenor in the international capital markets. This is the first 10 year issuance out of India for a corporate issuer since March 2018 and the largest 10 year issuance of an Indian investment grade issuer in the Reg S only market since January 2017. The issue was over-subscribed more than 4.5 times. OIL is the first Indian Oil & Gas Company to list the Bonds on International Securities Market of London Stock Exchange.



भारत डायनामिक्स लिमिटेड BHARAT DYNAMICS LIMITED

- मिनीरत्न श्रेणी-1 का सार्वजनिक रक्षा उपक्रम
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 - वायुवाहक उत्पाद
 - भू-आधारित उपकरण
 - उत्पाद के चलने तक हमकदम
- A Miniratna Category - I Defence PSU
- Listed in NSE and BSE
- Incorporated in July, 1970
- Core areas of operation:
 - Guided Missiles and allied equipment.
 - Underwater Weapons.
 - Airborne Products.
 - Ground Support Equipment.
 - Product Life Cycle Support.



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भारत डायनामिक्स लिमिटेड BHARAT DYNAMICS LIMITED

(भारत सरकार का उपक्रम, रक्षा मंत्रालय) A Govt. of India Enterprise, Ministry of Defence)

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गच्छी बगल, हैदराबाद - 500032 तेलंगाना, भारत। ई-मेल: bdbdl@bdi-india.in वेबसाइट: <http://www.bdi-india.in>
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'ALUMOF' - Mascot for INCAL 2019

Unveiled by Minister of Mines Mr. Narendra Singh Tomar



Union Minister of Parliamentary Affairs, Panchayati Raj and Mines, Mr. Narendra Singh Tomar at the unveiling of the official Mascot 'ALUMOF', at the Meeting of Parliamentary Consultative Committee held at Vadodara, Gujarat.

Union Minister of Parliamentary Affairs, Panchayati Raj and Mines, Mr. Narendra Singh Tomar recently unveiled the official Mascot 'ALUMOF', at the Meeting of Parliamentary Consultative Committee held at Vadodara, Gujarat.



ALUMOF, which stands for Aluminium – The Metal of the Future was unveiled by the Minister of Mines, in the presence of Mr. Anil Mukim, IAS, Secretary, Mines, Mr. Anil Kumar Nayak, Joint Secretary, Mines

and Dr. Tapan Kumar Chand, CMD, NALCO and Chairman, Aluminium Association of India.

In the build up to the much-awaited International Conference on Aluminium 2019 (INCAL),

which is slated to be held in Bhubaneswar ALUMOF was launched to promote INCAL 2019 and entertain the crowds at various strategic locations across the country. The mascot aims to raise awareness and promote Aluminium as the metal of the future and a metal of national importance.

On the sidelines of the Meeting of Parliamentary Consultative Committee, Minister of Mines Mr. Narendra Singh Tomar also inaugurated a CSR coffee-table book 'Samvedana – The Empathy'. The coffee-table book provides a pictorial depiction of the myriad CSR activities being undertaken by NALCO in its various focus areas, including impactful intervention in Healthcare, Sanitation, Drinking Water, Education, Environmental Sustainability, Infrastructure Development, Sports, Art and Culture, Community care, Livelihood etc. ■

BEL registers 20% growth in Top line upto Q3

In the nine month period upto December 2018, BEL achieved a Net Turnover of Rs.8,016.62 Cr., registering a growth of about 20 percent over the Net Turnover of Rs.6,578.59 Cr. recorded in the corresponding period of the previous year. Profit After Tax (PAT) up to 3rd Quarter of FY 2018-19 stood at Rs.1,258.67 Cr. against the Profit After Tax (PAT) of Rs.840.55

Cr. recorded in the corresponding period of the previous year.

An Interim Dividend of 30 percent has been declared by the Board of Directors for the year 2018-19. During the 3rd Quarter of FY 2018-19, the Company has achieved a Net Turnover of Rs. 2,656.38 Cr., registering a growth of about 8 percent over the Net Turnover of Rs.2,452.31 Cr. recorded in the

corresponding period of the previous year. The Profit After Tax (PAT) during the 3rd quarter of FY 2018-19 stood at Rs. 507.63 Cr., against the Profit After Tax (PAT) of Rs. 302.84 Cr. recorded in the corresponding period of the previous year.

The order book position of the company as on 1st January, 2019, was Rs. 48,402 Cr. ■

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AAI partners with Government of Haryana for Development of Teaching Learning Material in Hindi

Airports Authority of India (AAI) has signed a Memorandum of Agreement (MOA) with Haryana School Siksha Paiyojna Parishad (HSSPP) under Corporate Social Responsibility (CSR) Initiative for “Provisioning of Teaching Learning Materials for Hindi Instruction in Government Schools (Grade 1-3)” with financial assistance of Rs.94.31 Lakhs in Kurukshetra District of Haryana.

The MOA was signed by Dr. M K Bimal, Airport Director, Safdarjung Airport from AAI and Ms. Savitri Sihag, Deputy Director (Programme Management), HSSPP and detailed discussion was also held to achieve the target in the most effective way.

This Programme is specially designed for the inclusive development of children from primary classes. With an objective to



Dr. M K Bimal, Airport Director, Safdarjung Airport and Ms. Savitri Sihag, Deputy Director (Programme Management), HSSPP during signing of MoA for development of teaching learning material in Hindi in presence of officials AAI and HSSPP.

enhance basic knowledge, perception, intelligence and academic excellence of students; teaching learning material such as story books, conversion charts, letter cards, consonant vowel grids, graded story cards will be provided in mother tongue i.e. Hindi.

A guidebook for teachers to conduct instructional activities will also be developed, which shall be value addition to the teaching process. The programme will benefit approximately 3500 children in 175 Government Schools of Kurukshetra, Haryana. ■

GRSE Celebrates its Annual Function



GRSE celebrated its Annual Function recently for employees' family members. The programme included Painting, Singing and Dance competition for employees' children, sports activities for employees' spouse followed by a musical programme. The event was held in GRSE Main unit. Around 1000 employees and their family members participated in the programme. Mr. Rik Basu, renowned finalist of Zee Bangla Saregamapa- 2015 belted popular numbers which enthralled the viewers.

Rear Admiral V.K. Saxena, IN (Retd.), CMD, GRSE, Mr. S. S. Dogra, Director (Finance) and Mr. A.K. Nanda, Director (Personnel) along with their good ladies were present in the day long programme. ■

भारत को मजबूत बनाता आर आई एन एल-वाइजाग स्टील



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Contract signed by Goa Shipyard Limited with MoD for Acquisition of Two 1135.6 Follow-On Ships for Indian Navy



Exchange of documents between GSL and MoD officials after signing of the contract.

In a major boost to 'Make in India' and indigenous shipbuilding, Goa Shipyard signed contract with Govt/ MoD for construction of 02 Advanced Missile Frigates for the Indian Navy. The contract was signed on 25 Jan 2019 between Ministry of Defence and Goa Shipyard Limited at New Delhi.

The first ship is scheduled to be delivered in 2026. The ships are to be constructed at Goa Shipyard under Transfer of Technology with Russia as per Govt to Govt Agreement. Under the Agreement, the Russian side will provide Design Documentation, part Build Material and technical assistance for construction of ships at Goa Shipyard. It will be a major import substitute Project,

wherein a large number of major equipment will be substituted with indigenous equivalent, in addition to planned use of significant indigenous build material. The entire hull of the ships will be built with indigenous steel.

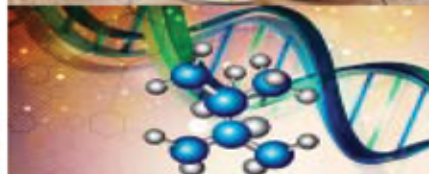
The Follow-on P 1135.6 series of frigates, customised to meet the Indian Navy's specific requirements, are potent platforms, with a mission span covering the entire spectrum of Naval warfare; Air, Surface and Sub-surface. The ships would be equipped to operate in littoral and blue waters; both as a single unit and as consorts of a naval task force. Advanced features of stealth include a special hull design, to limit radar cross-section, low electromagnetic, infrared and under

water noise signatures. The ships would carry highly sophisticated and state-of-art weapon systems and sensors.

The Project is the largest shipbuilding project in the history of Goa Shipyard and will propel it into the select league of shipyards which can design and construct complex weapon intensive ships such as Frigates. It will also open a number of export opportunities for the Shipyard in this niche segment. The challenging Project will demand upgrading of skill sets, technology, infrastructure in new areas of weapon integration, testing, trials, and propulsion system integration. Goa Shipyard, with its existing track record of delivering ships on time, high productivity and proven record for exports, has already commenced infrastructure development and comprehensive planning to effectively execute the Project.

The shipbuilding Project will also provide opportunities for the ancillary shipbuilding industry, as a large number of systems, equipment and yard material will be sourced indigenously, contributing to 'make in India' thrust of the Govt. Further, the service industry, especially at Goa, will gain from the services outsourced by the Shipyard, bringing employment for the local populace

Innovative Technologies Available for Commercialization



NRDC is engaged in the development, promotion and transfer of technologies emanating from various national R&D institutions/universities. The Corporation offers its IPRs and Technology Transfer services in wide ranging areas like: Agriculture, Chemical, Agro & Food processing, Life Sciences, Mechanical, Electrical & Electronics, Energy and Telecom. It acts as an effective catalyst in translating innovative research into marketable industrial products. NRDC has the largest repository of Indian technologies and licensed about 2,500 technologies to more than 4,900 entrepreneurs/start-ups/corporate in India and abroad. Some Innovative technologies are available with NRDC for commercialization having great potential in India and Abroad:

- Extraction of Azadirachtin from Neem Seeds Kernel and its Pesticide formulation
- Super absorbent Hydrogel
- Biopesticidal NemaGel
- Potassium Humate
- Krishi Sakti (10 HP Tractor)
- Updated Enquine Influenza Vaccine
- A Rapid test for Rabies Virus Antibody Detection
- Slow or Controlled Release Mosquito Larvicidal Composition and Process of preparation thereof
- Low Cost Jute Based Sanitary Napkin
- Karnataka Rice Hybrid (KRH-4)
- Silver Nano Particle as Antidandruff Aagents
- Live-attenuated Salmonella Typhimurium Vaccine
- Lyposomal Amphotericin-B
- Thrombinase-A Thrombolyting agent
- Environment Friendly Solvent Extraction
- Annona Seed Extract
- Pyriproxyfen
- Anaerobic Gas Lift Reactor (AGR)
- Thermostable ELISA Kits
- Novel Method for Simultaneous Detection and Discrimination of Bacterial, Fungal, Parasitic and Viral Infactions of Eye and Central Nervous System
- Non-invasive Breath Analyzer for Diabetes Monitoring
- Ayush-82, Ayush-64, Ayush SG
- Bala Rasayana
- Anti-Arthritis and Anti Fungal Ointments
- Mobile Bridge Inspection Unit (MBIU)
- Domestic Arsenic Filter Unit
- TOCO (Toilet Care Unit)
- Brick Making Machine (Extrusion type)
- Mosquito larvicidal Formulation based on Bacillus Thuringiensis var. Israelensis
- DNA Markers for Assessing Seed Purity
- DNA Sequence for Root preferred Gene Expression in Plants
- Vijetha-A Silkworm Bed Disinfectant
- Azotobacter Biofertilizer for Mulberry
- Chawki Leaf Chopper
- Phosphate Rich Organic manure (PROM)
- Ksheer Scanner, Ksheer Tester



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BHEL wins Largest order for Solar Photovoltaic (SPV) Plants

Bharat Heavy Electricals Limited (BHEL) has won an order for setting up 129 MW Solar Photovoltaic (SPV) power plants in Telangana from Singareni Collieries Company Limited. Significantly, valued at Rs.565 Crore, this is the largest SPV power plant order won by BHEL till date. The plants are to be set up at four locations in Telangana - Ramagundam (50 MW), Yellandu (39 MW), Manuguru (30 MW) and Pegadapally (10 MW), on Engineering, Procurement and Construction (EPC) basis. With this order, BHEL's solar portfolio has risen to more than 710 MW. BHEL has more than three decades of expertise in solar photovoltaic products and services backed by a dedicated R&D setup. BHEL is one of the very few companies in India, having established capability in major segments of the PV value chain viz., solar cells, PV modules and power conditioning units and systems.

BHEL bags order for Emission Control Equipment for Bhusawal 660 MW Supercritical power project in Maharashtra

Bharat Heavy Electricals Limited (BHEL) has secured an additional order from Maharashtra State Power Generation Company (Mahagenco) for its ongoing 660 MW coal-based supercritical thermal power project at Bhusawal thermal power station (Unit 6). The project is being executed by BHEL on Engineering, Procurement

BHEL forays into Track Electrification; Wins Rs. 350 Crore maiden EPC order for Railway Line Electrification

Against stiff international competitive bidding, BHEL has won an order for Electrification of 440 Track Kilometers (TKM) Railway Line on Engineering, Procurement and Construction (EPC) basis. Valued at approximately Rs.350 Crore, the order for Railway Line Electrification has been placed by Central Organization for Railway Electrification (CORE) for the sections; Birlanagar - Etawah, Bhandai - Udi and Farrukhabad - Shikohabad (including Mainpuri - Etawah) of North Central Railway. BHEL's scope of work in the order envisages design, engineering, supply, erection, testing and commissioning of 25 kV, 50 Hz, AC, Single-Phase Electrification works including Overhead Equipment (OHE), Traction Sub-Stations (TSS), Supervisory Control & Data Acquisition (SCADA) system, Electrical general works and associated Civil and Signal & Telecom (S&T) works.

& Construction (EPC) basis at Jalgaon district in Maharashtra. Mahagenco has reposed faith in BHEL by awarding the additional order for installation of emission control equipment, changes in various equipment/subsystems due to change in coal, modification in CHP/AHP, etc. With this order, the revised order value for the Bhusawal TPS Unit 6 EPC project is now around Rs.3,750 Cr. The initial order was won by

BHEL against stiff International Competitive Bidding (ICB). With this order, BHEL is poised to achieve its objective to indigenously design and manufacture key equipment for the entire range of emission control, thereby providing twin boost to the Government's plan of 'Making in India' and its Intended National Determined Contributions (INDC) for limiting the carbon footprint of the nation. ■

Inauguration of GRSE Crèche

A Crèche Facility has been created at GRSE for Children of Lady Employees. The Crèche has all Amenities and Facilities not only to cater for Physical, Emotional, Psychological and Hygiene related needs of the Children but also to make the prolonged stay of the Children, Comfortable and Interesting. The Crèche was inaugurated recently by Rear Admiral V. K Saxena, IN (Retd.) C&MD, GRSE in presence of Mr. A. K. Nanda, Director (Personnel) and other Senior Officials, Staff & Lady Employees along with their Children. Very few Organizations in the city provide Crèche Facility and it is expected that this facility will go a long way in helping the working mothers to remain stress-free and work peacefully with focus on their job.



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- Foray into Renewable Energy - Total installed capacity of 188.10 MW (comprising of 174.10 MW Wind and 14 MW Solar Energy Projects).
- International Credit Ratings- Moody's "Baa2" (stable) (higher than sovereign rating) and Fitch Rating "BBB-" (Stable) (equivalent to sovereign rating).



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 Uttar Pradesh-201301, India, Phone : +91-120-2419000, 2419200

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NHPC organizes **Free Medical Camp at Palla**

Under its CSR-SD Scheme, NHPC Ltd. in association with B. K. Hospital, Faridabad and Batra Hospital, Delhi and Centre for Sight, Faridabad organized a free medical camp at Primary Health Center, Palla, Faridabad recently. The camp was inaugurated by Councilor Mr. Jitender Yadav and Gita Rakshwal in the presence of Dr. Kamla Fartyal, Chief General Manager (Medical Services), NHPC. Dr. Rakesh Ranjan, Dr. Sushma Trivedi from NHPC, Dr. Jyoti Sharma, Incharge, Palla



Councilor Mr. Jitender Yadav & Gita Rakshwal inaugurating free medical camp at Primary Health Center, Palla, Faridabad.

CMD, NHPC delivers keynote address during **'16th Annual Conference on Hydro power in India'**



Mr. Balraj Joshi, CMD, NHPC, India's premier hydropower company delivered Keynote address at the '16th Annual Conference on Hydro power in India' recently in Le Meridien, New Delhi. The two day conference organized by Power Line provided a forum to discuss in detail the issues, solutions and new developments in Hydro Power Sector.

Exuding a positive outlook on the sector in the wake of infusion of RE in the grid in immediate future, Mr. Joshi shared NHPC's views on the current state of Hydro Power Sector and highlighted key issues and concerns impacting the growth of the sector to a gathering featuring prominent industry leaders and academicians at this well attended event. Mr. Joshi also spoke on 'the need for emphasis on Hydro Power' and stressed upon adopting a multipronged strategy for developing of Hydro Power that includes easing of clearance processes, long term soft loans and effective partnership with state governments. He also called upon the hydropower developers and contractors to yearn for delivering the projects in planned time and cost.

Primary Health Centre and Social Worker Mr. Om Prakash, and specialist doctors from Batra Hospital, Delhi like Cardiologist, Orthopaedic, Gynaecologist, Paediatric, Internal Medicine, Dentist, Physiotherapist, Ayush, Dietician and Cancer specialist were also present on the occasion. Specialist from Centre for Sight conducted eye testing of patients.

The camp was highly successful as 850 people from the surrounding areas availed the benefits of free medical facility. During the camp, free medical consultation was given by specialist doctors in Cancer, Cardiology, Gynaecology, Paediatrics, Orthopaedics, Internal Medicine, Dietician and Eye care. Blood Pressure, Blood sugar, Bone Density, PFT and other necessary tests and medicines were provided free of cost. On this occasion Dr. Sushma Trivedi from NHPC and Dietician Smt. Kanika Narang from Apollo hospital gave talk on Anemia Mukh Bharat. ■



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Cochin Shipyard Ltd Signs 5 Year AMC for Coastal Police Interceptor Boats with Kerala Police

Cochin Shipyard Limited (CSL) recently inked an Annual Maintenance Contract with the Kerala Coastal Police for the repairs and maintenance of 23 Coastal Interceptor Boats based over 18 Coastal Police stations being operated by the state Coastal Police. The AMC Agreement, with an intended validity of 5 years, is expected to help the force in keeping these assets operational and reducing downtime. The AMC Agreement was signed recently by Mr. Sreejith K. N., General Manager (Ship Repair), Cochin Shipyard Limited and Mr. K. P. Philip, IPS, Deputy Inspector General, Coastal Security, in the presence of Mr. Madhu S Nair, CMD, Cochin Shipyard Limited, Mr. Vijay Sakhare, IPS, Inspector General of Police, and other senior officials of Cochin Shipyard Ltd. & Kerala Police.



AMC agreement being exchanged between CSL and Coastal Security.

NBCC Employees win Silver at Management Olympiad By AIMA



NBCC employees have won silver medals in the Quiz Competition organized by All India Management Association (AIMA), at their 1st Corporate Management Olympiad which was held recently. Ms. Ramya AS, DGM(C), Geetanjali Pandey, DM (HR) won in Women Centric Category; while Mr. K. A. Srikanth, DM(HR), Prasanta K. Das, DM (HR) won in HR Category. The Olympiad saw participation of employees from various Public & Private sector Organizations in different competitions such as Marketing & Brand Quiz, HR and L&D Quiz, Women Centric Quiz, Case Study Competition, Business Stimulation Competition (Smart Biz).

NALCO & Commissionerate Police join hands to organize Mega Blood Donation Camp

NALCO, in association with the Commissionerate Police, Bhubaneswar, recently organized a Mega Blood Donation Camp, as part of the 39th Foundation Week Celebrations, held at Nalco Nagar. The blood donation camp, in which citizens came forward for the noble initiative, was inaugurated by Dr. Tapan Kumar Chand, CMD, NALCO, in presence of IPS Mr. Anup Kumar Sahu, DCP, Bhubaneswar.



Chairman NTPC visits NCL's Coal Mine that Feeds India's largest Thermal Power Station



Mr. Gurdeep Singh, CMD, NTPC visiting the NCL coal mine.

Mr. Gurdeep Singh, CMD of National Thermal Power Corporation (NTPC) has expressed his happiness over the coal supply being made to its pithead thermal power plants by Northern Coalfields Limited (NCL) and has urged NCL to extend its support to the up-county power stations of NTPC including Mauda Thermal Power Station (TPS) in Maharashtra under Flexi Utilization of Domestic Coal scheme. Mr. Singh was on a visit to Nigahi Coal mine of NCL recently that feeds NTPC Vindhyachal Super Thermal Power Station (STPS), India's largest thermal power station.

Presently, NCL has Fuel Supply Agreement (FSA) with three of the NTPC pit-head thermal power stations namely Vindhyachal STPS, Singrauli STPS and Rihand STPS and these power stations are having sufficient stock of coal. India's largest power station Vindhyachal STPS that is fully fed by NCL coal is having 26 days coal stock against normative requirement of 15 days. This power station is fed by NCL's Nigahi and Dudhichua coal mines. Similarly,

Singrauli STPS is having 29 days of coal stock against normative requirement of 15 days. Rihand STPS is having 30 days of coal stock against normative requirement of 15 days. The company is also supplying 2.5 Lakh tonnes of coal per month to NTPC Mauda STPS Flexi Utilization of Domestic Coal scheme.

NTPC Bond Issue Gets Overwhelming Response

NTPC's Series 67 Bond Issue through private placement, for which bidding took place recently has received overwhelming response from the investors. Against an issue size of Rs. 500 cr. with Green Shoe option to retain

over subscription upto Rs.3,500 cr., bids of Rs.12,520 cr. were received. The issue generated lot of interest among investors thereby pulling down the yield for 10-year bonds to attractive levels of 8.30 percent annualized. In the first 10 minutes of opening of the issue itself, subscription for the entire offering of Rs.4,000 Crore was received.

The Company has decided to exercise the Green Shoe option to retain additional amount of Rs.3,500 Crore. The Bonds shall be listed on NSE & BSE. Investors have once again reposed their confidence in India's number one Power Generating Company.

Power & Renewable Energy Minister inaugurates NTPC pavilion at WFES-2019, Abu Dhabi (UAE)

NTPC participated in the World Future Energy Summit, 2019 at Abu Dhabi recently WFES is a global platform and one of the largest exhibition events in Middle East focused on Energy and Sustainable development. NTPC has put up a pavilion in the exhibition, which was inaugurated by Mr. R. K. Singh,

Minister of State (IC), Power and New & Renewable Energy recently. Minister also released a coffee-table book titled 'Powering an Energy-Rich Future' on this occasion in presence of Mr. Navdeep Suri, (Indian Ambassador at UAE), Mr. Anand Kumar (Secretary, MNRE), Mr. A. K. Gupta, Director (Commercial) and Mr. G. Venu, ED (Engg.) Complimenting the efforts made by NTPC outside India, Minister of State for Power looks forward to see NTPC emerging as the largest multi-national power generation company in the world in the next few years.





NRL organises SAKSHAM Cycle Day in Silchar



Hundreds of cyclists paddled their way promoting good health, environment protection and fuel conservation at the SAKSHAM Cycle Day organised by NRL in Silchar recently as part of SAKSHAM Cycle Day being observed in 200 cities simultaneously across the country. The cyclists followed a 5 km 'Green Ride' route starting from Police Parade Ground through Cachar College, Madhuramukh, Rongpur Ground to finally culminate at the starting point. Earlier, the cycle rally was flagged off by a host of distinguished dignitaries which included Sr. CGM (Mktg. & BD), NRL, Mr. B. Ekka, noted social activist of Silchar, Dr. Rajdeep Roy; Member Secretary, SLAC for Students and Youth Welfare, Assam, Mr. Lakhya Konwar, Superintendent of Police-Silchar, Mr. Rakesh Roushan in presence of MLA Borkhola Mr. Kishore Nath; MLA, Silchar, Mr. Dilip Kumar Paul; Vice Chairman, Silchar Municipal Board, Ms. Chameli Paul and officials from NRL and representatives of other local bodies. Promoted by the slogan, 'Ao Cycle Chalaye' and tagline

- 'Cycle for Health, Environment and Growth', SAKSHAM Cycle Day is a part of the month long nationwide SAKSHAM 2019 (Sanrakshan Kshamta Mahotsav) being observed recently. Spearheaded by Petroleum Conservation Research Association (PCRA) under the aegis of Ministry of Petroleum & Natural Gas (MoP & NG), Govt. of India, the objective of SAKSHAM 2019 is to sensitize the masses about the conservation and efficient use of petroleum products towards better health and environment.

Union Cabinet clears Numaligarh Refinery Expansion proposal

Highest ever investment in North East India at Rs.22,594 cr.

Giving a definitive push to its North East development agenda, the Union Cabinet recently cleared the proposal for capacity expansion of Numaligarh Refinery from its existing 3 Million Metric Tonnes per annum (MMTPA) to 9 MMTPA at

an estimated investment of Rs. 22,594 Crore, the highest so far in NE India. The project completion time would be 48 months from the zero date. In addition to capacity expansion, the project would also include a 9MMTPA, 1,398 KM Crude oil pipeline from Paradip to Numaligarh and a 6 MMTPA, 654 KM Product pipeline from Numaligarh to Siliguri. The Cabinet approval provides for granting Capital subsidy to the tune of Rs. 1,020 Cr. and continuation of 50 percent Excise duty benefit to the Project for a period of 15 years post commissioning.

This mega project would usher Assam and the NE region in a new era of economic and industrial development by boosting large scale investment opportunities and creating robust direct and in direct employment opportunities. An estimated 8,000 people would be involved in executing the project during its construction. The project would also contribute significantly in meet the growing demand of petroleum products in North East and Eastern India and ensure crude oil security for all the four Assam Refineries. It would additionally act as a fulcrum and primemover for other projects envisaged in the NE Hydrocarbon Vision 2030. Auguring well with Act East policy of Govt. of India, it will enhance export of petroleum products to India's geographically contiguous neighbors viz. Myanmar, Bhutan and Bangladesh. ■

NMDC's Spectacular Financial Performance for the Quarter Ending 31st December 2018



N. Baijendra Kumar, IAS
CMD, NMDC

- **Turnover up (9 months) by 10 percent to Rs. 8,509 Cr as against Rs.7,732 Cr during CPLY**
- **Profit Before Tax (9 months) up by 19 percent to Rs. 5,001 Cr as against Rs. 4,187 Cr during CPLY**
- **Profit After Tax (9 months) up by 18 percent to Rs. 3,188 Cr as against Rs. 2,700 Cr during CPLY**
- **Earning Per Share (9 months) gone upto Rs.10.08 as against Rs. 8.53 during CPLY**

NMDC has registered once again an impressive performance for the 3rd quarter (2018-19). NMDC's turnover for the third quarter 2018-19 is Rs.3,649 cr., against Rs.2,469 cr., in 2017-18 (Q3) registering growth of 48 percent. Profit Before Tax (PBT) is Rs.2,211 cr. against Rs.1,377 cr. in 2017-18 (Q3) registering growth of 61 percent. Profit After Tax (PAT) is Rs.1,577 cr. against Rs.887 cr. in 2017-18 (Q3) registering growth of 78 percent. The Company's

production of iron ore for the third quarter 2018-19 is 9.54 Million Tonnes (MT) and sales of iron ore is 8.70 MT. Recently, NMDC Board has approved buy-back of 10,20,40,815 equity shares of Re.1/- each @ Rs.98 per share for an aggregate consideration not exceeding Rs.1,000 cr. The company has already initiated the process of buyback. The 3rd quarter results for 2018-19 were approved by the Board of Directors of the Company under the Chairmanship of Mr. N. Baijendra

Kumar, IAS in its meeting held on 31.01.2019. Congratulating all the employees and Board Members, Mr. Kumar said NMDC could achieve these encouraging results inspite of challenges faced by the company at Donimalai Sector in Karnataka and evacuation challenge at Bailadila Sector in Chhattisgarh. These inspired efforts of team NMDC would help in overcoming the adverse conditions and ensure that the company would certainly exceed the targets in future also.

Lt. Governor, Delhi Visits

NBCC East Kidwai Nagar Project



Lt. Governor, Delhi Mr. Anil Baijal, accompanied by Dr. Anoop Kumar Mittal, CMD, NBCC, recently visited NBCC's East Kidwai Nagar Redevelopment project in New Delhi. Dr. Mittal while taking Lt. Governor around apprised him of the project, equipped with world class amenities along with eco-friendly and zero waste system in place. He also stated that the benefits emerging from the project had far reaching effects such as Swacchata, recycling and reuse of waste water. During the visit, Lt. Governor appreciated NBCC Team for its excellent work in the Redevelopment project - a self sustainable sub-smart city concept with social infrastructure.



SAIL Organizes Foundation Day Walk & Run



Steel Authority of India Ltd. (SAIL) organised a 'walk & run' to celebrate its foundation day recently. The event saw huge participation from SAIL fraternity and various stakeholders of the Company as well. Speaking on the occasion,

Chairman SAIL Mr. Anil Kumar Chaudhary said that keeping fit is essential to perform every other duty well. Further he said that Company is committed to fulfill its commitment of steel supply to every core sector of nation. The Company has been serving a steel maker of India and partnering country's growth and will do so in future as well.

After the event, special prizes were given to winners in various categories. Participants ranging from all age groups participated and made the event a success.

MoU signed between Goa Shipyard Limited & Forum for Innovation Incubation Research and Entrepreneurship



Taking another firm step forward towards innovation and development of new technology enabled products/processes with a scalable business model, Goa Shipyard Limited (GSL) signed a MoU recently with Forum for Innovation Incubation

Research and Entrepreneurship (FiiRE). The MoU between FiiRE and GSL will permit startups to address technology gaps in shipbuilding by leveraging on shipbuilding ecosystem at GSL and other shipbuilding industries in Goa. GSL will support the incubation centre for AI enabled advance technology projects being undertaken relevant to shipbuilding industry. FiiRE is a technology business incubator established with the support of Department of Science and Technology, Government of India under the National Initiative to Develop & Harness Innovation (NIDHI).

Workshop for Implementation of Grid Connected Rooftop Solar



Mr. A.K. Jain, MD, REIL inaugurating the workshop.

Mr. A.K. Jain, MD, REIL inaugurated workshop with lightening of lamp in the presence of officials of its allocated 10 ministries and selected developers for MNRE's achievement linked incentive scheme recently SCOPE

Convention Centre, Lodhi Road, New Delhi. Mr. Piyush Paliwal, ED, REIL welcomed officials from the allocated ministries and their attached officials, MNRE and developers. The workshop received overwhelms response by way of participation of nearly 60 personnel from these offices. Mr. J.K. Jethani, Director, MNRE also joined a special invitee.

Mr. Jain apprised the REIL working as expert CPSE and PMC has already completed RTS projects of 16 MW in CAPEX model mainly under Ministry of Coal and Ministry of Petroleum and Natural Gases. Notification of Awards (NoAs) has been released for MNRE's sanctioned RTS

projects 42 MW under RESCO model to the selected bidder finalized through reverse bidding

The workshop addressed challenges in implementation of Grid Connected RTS projects by way of interactive session and fruitful discussions amongst stakeholders to expedite and complete the projects in given timeline of MNRE. The issues highlighted by different stakeholders were deliberated in length and were resolved to maximum extend subjected to the guidelines of MNRE and to adhere project completion deadline. The present officials from ministries agreed to take immediate steps to get PPAs signed on priority.

NBCC Bags Rs. 228 cr Order to Redevelop WHO Building

NBCC(India) Limited, entered into a Tripartite Memorandum of Agreement with Ministry of Health and Family Welfare (MoHFW) and WHO-SEARO for the redevelopment of World Health Organisation (WHO) – SEARO building in New Delhi at cost of Rs 228 crore. In presence of Mr. Jagat Prakash Nadda, Union Minister, MoHFW, Govt. of India, a Tripartite Memorandum of Agreement was signed among Ms. Preeti Sudan, Secretary, MoHFW;

Smt. Poonam Khetrpal Singh, Regional Director WHO-SEARO and Mr. Rajendra Chaudhari, Director (Commercial), NBCC (I) Ltd. Another bipartite

agreement was signed between Mr. Lav Agarwal, Joint Secretary (International Health) MoHFW and Director (Commercial), NBCC.





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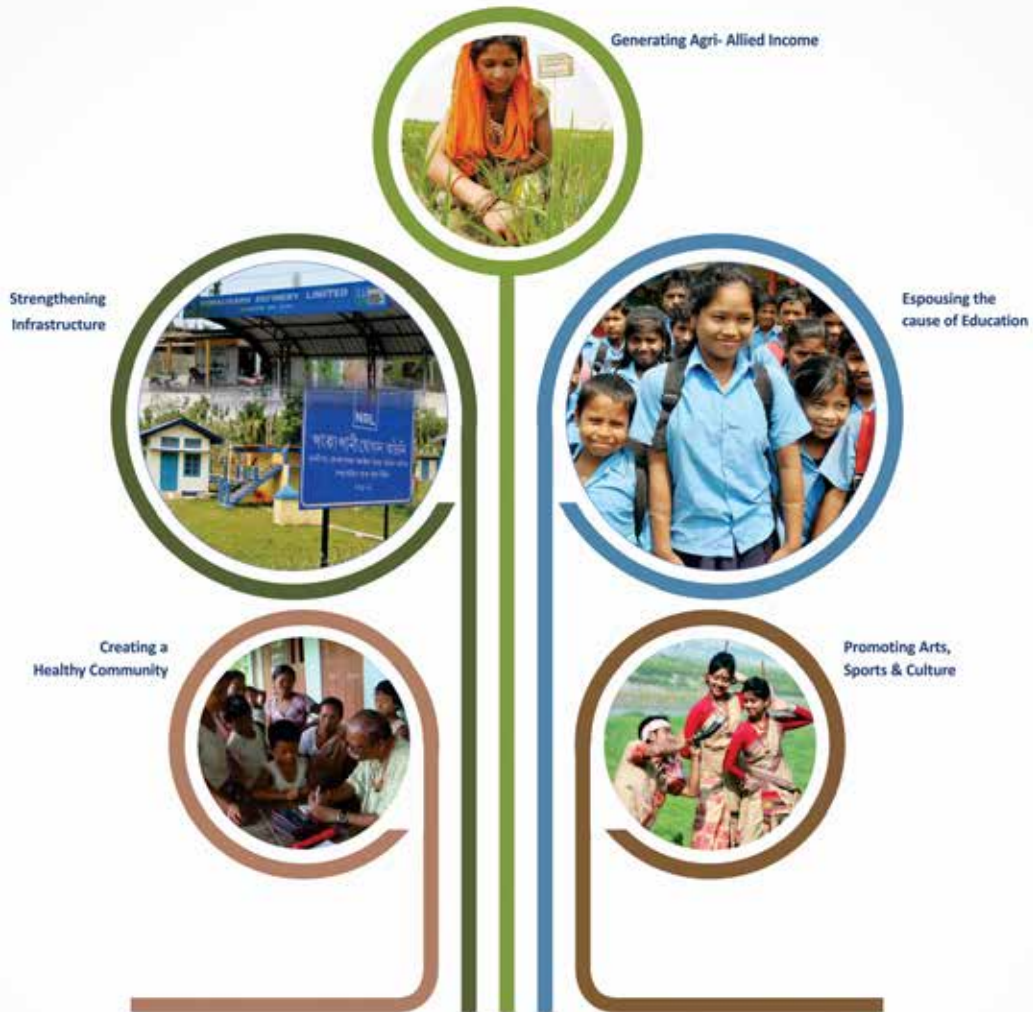
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under

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<p>Supports academia to develop technologies/ products (up to PoC stage) of national importance and their subsequent validation towards commercialization through:</p> <ul style="list-style-type: none"> Academic Innovation Research (AIR) Development of PoC by academia with/ without the involvement of industry Contract Research Scheme (CRS) Aims at validation of prototype/technology by the industrial partner 	<p>Supports industry for development of proof-of-concept and early stage validation of products/ technologies of high societal relevance</p> <ul style="list-style-type: none"> Encourages and strengthens R&D capabilities and capacity of smaller businesses Funding in the form of Grant-in-aid is provided to start-ups, SMEs and other Biotech companies on cost sharing basis 	<p>Supports industry for high risk, transformational technology/ process development from proof-of-concept to late stage validation leading to product commercialization</p> <ul style="list-style-type: none"> Supports new and futuristic technology development with major social bearing but uncertain market driven demand Biotech companies receiving financial support are required to contribute at least 50% of the total project cost

Who can apply?

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For SBIRI & BIPP

A single or consortia of Indian company (ies) registered under "The Indian Companies Act 2013" with minimum 51% Indian ownership, and in-house R&D unit, are eligible to apply either alone, or in collaboration with another Company/Institute/University

How to apply?

Proposals for all the Schemes are required to be submitted **online only**. For prioritized areas, scheme details and information on submission of proposal, please log on to BIRAC website (www.birac.nic.in).

Last date for submission of proposals

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For queries, please contact: Head - Investment, BIRAC. **Email:** investment.birac@gov.in



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(भारत सरकार का उपक्रम), मिनी रत्न-II कंपनी

आई एस ओ 9001:2008 14001:2004 एवं आई.एस.एस.एस 18001:2007 प्रमाणित कंपनी



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एफ.एस.एन.एल. भवन,
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- 43,450 किमी. टेलीकाम नेटवर्क का स्वामित्व एवं संचालन
- मवप्रवर्तन : विश्व में पहली बार 1200 केवी यूएचवीएसी प्रणाली का विकास एवं उसका ग्रिड के साथ आमेलन