Business Today

www.businesstoday.in I July 1, 2018 I ₹100

Bankruptcy Code: Lenders & Losers

Sector Report: Clean Technology: Saving the Environment

WAREHOUSING

THE NEW REAL ESTATE BOOM

Over the next two years, ₹45,000 crore will be invested to build 100 million sq feet of fresh warehousing space. What triggered the revolution and is it here to stay

विकास यात्रा 2018

On the fast lane to progress

On 12th May, the Government of Chhattisgarh kick started the third edition of the Vikas Yatra from Bastar as he did in the previous two editions of 2008 and 2013 as well. This has great significance because Bastar has been a Naxal infested area, which has posed a great challenge to the overall progress of Chhattisgarh. The Vikas Yatra was conceptualized as an opportunity to engage in a dialogue with the masses on the developmental work carried out in the state. This also underlines the unwavering courage of the incumbent government to meet with its constituents and apprise them of the monumental development it has done for them. It is this sense of commitment that has endeared Hon'ble Chief Minister Dr. Raman Singh to the masses, so much so, that on the first day of Vikas Yatra 2018, a tribal lady volunteered to feed CM a wild berry.

The Hon'ble Chief Minister believes in a transparent governance and has, on multiple occasions connected with people through programs & events including Jan Darshan, Gram Suraj Abhiyan, Nagar Suraj Abhiyan, Lok Suraj Abhiyan, Kisan Mahotsav, Bonus Tihar and Bijli Tihar.

In a bid to showcase the progress that has been achieved in Chhattisgarh, Hon'ble Chief Minister is making strident efforts to reach every nook and corner of the state. The yatra is being conducted in two phases – 12th May to 11th June and 16th August to 30th September. CM will visit 62 constituencies in the first phase that would comprise of 53 Aam Sabhas, 39 Swagat Sabhas and 16 road shows.

Determined for development

The Hon'ble Chief Minister, before joining politics was a doctor by profession. Understanding the pulse of the masses has always come naturally to him. He has always made an effort to understand the needs of the people of Chhattisgarh by reaching out and listening to their issues. The state's Food Security Law for example has been lauded across the country. Other states are curious about how easily this has been implemented. Uttar Pradesh CM Yogi Adityanath sent his ministers and senior officials to Chhattisgarh to study the implementation immediately after he assumed power. Under the Hon'ble Chief Minister's vision and leadership, Chhattisgarh became the first state to provide ration at such subsidized rates. This

Chhattisgarh Vikas Yatra

example was followed quickly by 18 other states. The incumbent governance team and leadership have therefore, over the past 15 years or so, come to be known as a "People's Government", for having successfully started and implemented various schemes for the benefit of the people.

All families living in Chhattisgarh are eligible to receive Rs.50,000 per year for the treatment of ailments through National Health Insurance/ CM Health Insurance. The Chirayu Scheme and Baal Hriday Scheme that favourably impacted children of the state have been praised by several agencies across the country. Besides providing free education, meals, uniforms and textbooks are distributed in the government schools. In the Naxal-affected zone, special attention is given to education through POTA cabins, ashram schools and Eklavya Prayas schools to help children of re-habilitated Naxals as well. These students are also provided free coaching for competitive exams. LWE (Left Wing Extremism), which has adversely affected Dantewada, is now emerging as an "educational hub".

To further the cause of women empowerment, the government has instituted several schemes to provide better health and education facilities. Primary, higher and technical education is free for girl students. Mahtari Jatan Yojana, which caters to the needs of pregnant women, has benefitted more than 5 lakh women.

Similarly, farming equipment, seeds, compost, etc. are being provided to farmers at concessional prices. The budget allocation for Agriculture in FY 2018-19 has been proposed at Rs.13,000 crores. It is no mean achievement that Chhattisgarh has also received the Krishi Karman Award four times for record food grain production.

In 2003, when the Hon'ble Chief Minister formed the government in the state for the first time, he had to contend with a state that was going through the pangs of developmental infancy. When the state was formed, it had only basic infrastructure and consequently, neither did it feature high on the national development indices nor was it accorded the respect it deserved at the national level. Chhattisgarh is no longer in the so-called list of "Bimaru" states as per the assessment reports of NITI Aayog. It has been ranked as the fourth best state in the Ease of Doing Business index of the World Bank. Chhattisgarh of 2018 is a live example of what the ideal levels of development indices should be.

VikasYatra2018 edition – An oath of development

This year development work worth Rs.29,500 crores will be implemented to benefit the masses. The farmers will be receiving paddy bonus worth Rs.1700 crores, and a further Rs.120 crores will be distributed under gram promotion scheme. The tendupatta collectors will also receive a bonus of Rs.700 crores. Under the PM Ujjawala Yojana, 12 lakh families have benefitted from the distribution of free LPG Gas connections.

Moreover, to ensure enhanced communication, the Sanchar Kranti Yojna (SKY) is being launched. Under SKY, 55 lakh smartphones will be distributed during Vikas Yatra. A budgetary allocation of Rs.1200 crores has been made for the implementation of this scheme.

Under the Labour department, 560,000 labourers will be provided with a toolkit and other equipment worth Rs.250 crores. Rs.23,000 crores will be invested to undertake construction of buildings and roads.

Under the Bharat Net project, the state proposes to make an investment of Rs.2500 crores to improve information and interconnectivity through the laying of fibre optic cable through the state.

Furthermore, with a view to improve irrigation facilities in the state the Hon'ble Chief Minister will inaugurate and dedicate projects worth Rs.1462 crores.

The Government of Chhattisgarh is committed to the development of the state and intends to exhibit its resolve for the same through Vikas Yatra 2018.

VikasYatra 2018

My valued colleague @drramansingh Ji and his entire team have been working tirelessly for the transformation of Chhattisgarh. Raman Ji's experience, wisdom and focus on inclusive growth is taking Chhattisgarh to new heights of progress.

Narendra Modi
Prime Minister, India
via his twitter handle @narendramodi

छत्तीसगढ़ जनसंपर्क

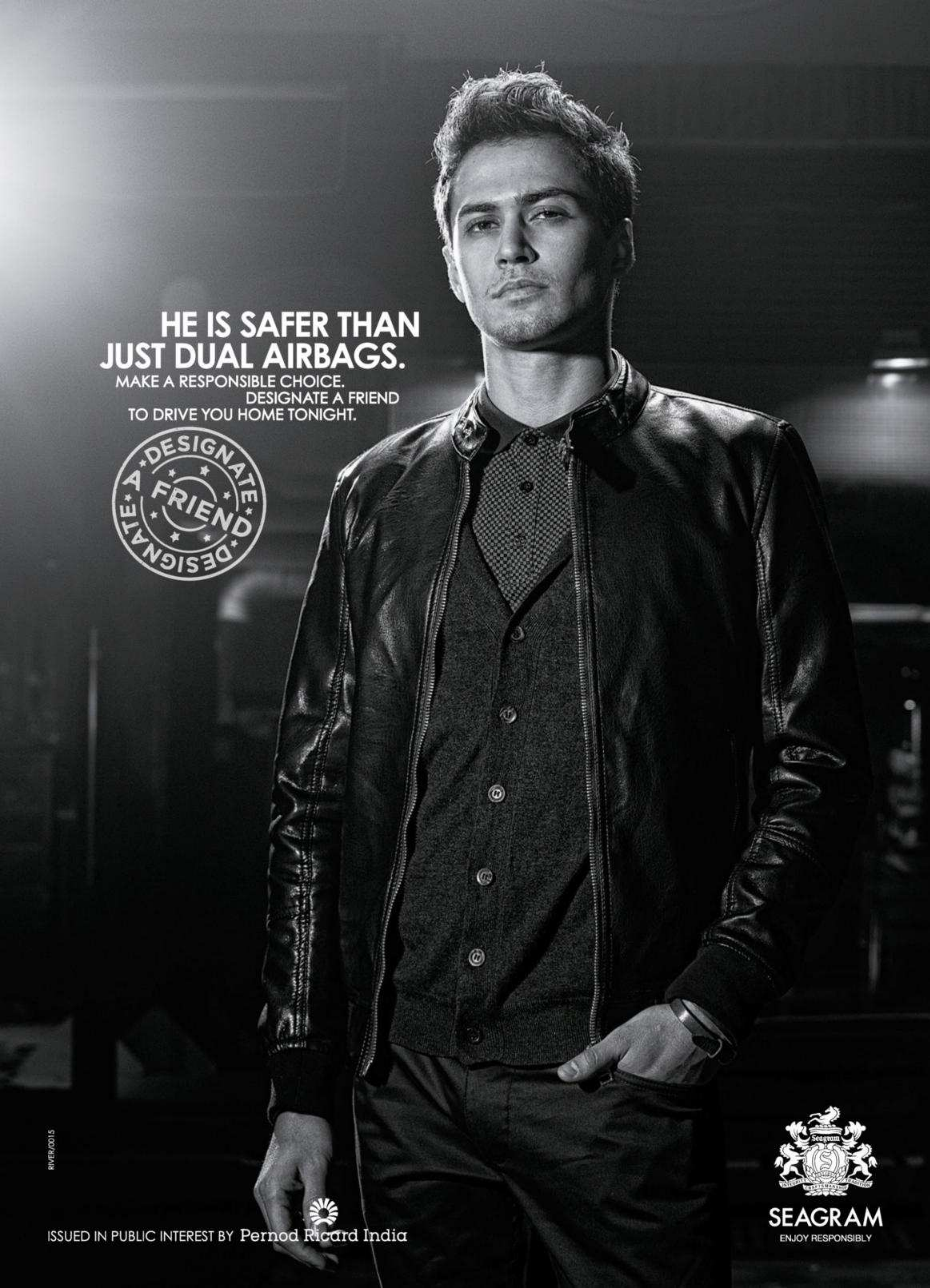
Business Today

www.businesstoday.in | July 1, 2018

INDIA TODAY GROUP

WAREHOUSING
THE NEW REAL ESTATE BOOM

Over the next two years, ₹45,000 crore will be invested to build 100 million sq feet of fresh warehousing space. What triggered the revolution and is it here to stay


HE IS SAFER THAN
JUST DUAL AIRBAGS.
MAKE A RESPONSIBLE CHOICE.
DESIGNATE A FRIEND
TO DRIVE YOU HOME TONIGHT.
DESIGNATE A FRIEND DESIGNATE DESIGNATE
RIVER/0015
ISSUED IN PUBLIC INTEREST BY Pernod Ricard India
SEAGRAM
ENJOY RESPONSIBLY

Stocking Up

WAREHOUSES lack the sex appeal of the slick, consumer-facing showrooms, though, they are probably as important, if not even more, for any consumer products company that wants to win in the marketplace. Strategically placed warehouses allow the company to deliver the product quickly and service the customer better. They are the not-so-visible parts of a company's supply chain, but they form the crucial link between the factory and the customer.

There is a veritable revolution taking place in Indian warehouses now for multiple reasons. First, GST has completely changed the rules of the game for all companies when it comes to choosing the spots where they will set up their warehouses. Earlier, different taxes in different states played a huge role in deciding the placement of warehouses. Today, after GST has been rolled out, companies can decide warehouse locations solely based on how they want to service key markets and the end-customer.

A few other things are happening simultaneously. The scale of the average warehouse is changing as is the amount of technology being used in it. New warehouses that are being built are not only far more massive than the earlier generation buildings, they also use far more technology – from robots that can load and unload and shelve stuff to scanners that can automatically keep track of things coming in and going out. Specialised warehousing firms setting up third-party warehouses and servicing multiple clients from the same warehouses are also becoming big businesses. Global warehousing giants are also coming to India. It is the new real estate boom, and even lease costs of warehousing space is shooting up.

The amount of money being put in is staggering. Over the next two years, ₹45,000 crore will be pumped in to set up new warehouses, says one study. It will add over 100 million sq.ft. of fresh space to the 140 million that exists today.

Warehouses have always existed and have played a crucial role in any logistics planning but it was really the rise of Amazon in the US, which put the spotlight on what was essentially a backroom story till then. In order to achieve more efficiency while squeezing costs, Amazon depended on its warehouses – and it invested heavily in technology to see how it could improve customer service, shave off minutes from its delivery times, and shelve and unshelve products at maximum speed. It experimented with robots, just like it is now experimenting with drones to achieve better deliveries. In essence, it upped the warehousing game, just as the famed Japanese innovations had changed the standards in manufacturing in every sector from consumer durables to automobiles a few decades ago.

Prosenjit Datta

prosenjit.datta@intoday.com
@ProsaicView

Business Today
http://www.businesstoday.in

Editor-in-Chief: Aroon Purie
Group Editorial Director: Raj Chengappa

Editor: Prosenjit Datta
Group Creative Editor: Nilanjan Das,
Group Photo Editor: Bandeep Singh
Managing Editor: Rajeev Dubey
Deputy Editor: Anand Adhikari

SPECIAL PROJECTS AND EVENTS
Senior Editor: Anup Jayaram

CORRESPONDENTS
Senior Editors: P.B. Jayakumar, Nevin John, Goutam Das, Ajita Shashidhar, Joe C. Mathew
Senior Associate Editors: E. Kumar Sharma, Anilesh Mahajan, Dipak Mondal
Associate Editors: Manu Kaushik, Sumant Banerji
Senior Assistant Editor: Nidhi Singal
Special Correspondent: Sonal Khetarpal

RESEARCH
Principal Research Analyst: Niti Kiran

COPY DESK
Senior Editors: Mahesh Jagota, Rishi Joshi
Associate Editor: Sanghamitra Mandal
Assistant Editor: Sapna Nair Purohit
Chief Copy Editor: Gadadhar Padhy
Senior Sub Editor: Devika Singh

PHOTOGRAPHY
Photo Editor: Reuben Singh
Deputy Chief Photographer: Shekhar Ghosh
Principal Photographer: Rachit Goswami
Senior Photo Researcher: Sudhansh Sharma

ART
Assistant Creative Editor: Safia Zahid
Associate Art Directors: Amit Sharma, Ajay Thakuri
Chief Designers: Raj Verma
Designers: Rajesh Singh Adhikari

PRODUCTION
Chief of Production: Harish Aggarwal
Senior Production Coordinators: Narendra Singh, Rajesh Verma

LIBRARY
Assistant Librarian: Satbir Singh

Publishing Director: Manoj Sharma
Associate Publisher (Impact): Anil Fernandes

IMPACT TEAM
Senior General Manager: Jitendra Lad (West)
General Manager: Upendra Singh (Bangalore)
Kaushiky Gangulie (East)

Marketing: Vivek Malhotra, Group Chief Marketing Officer; Vipul Hoon, General Manager

Newsstand Sales: D.V.S. Rama Rao, Chief General Manager; Deepak Bhatt, General Manager (National Sales); Vipin Bagga, Deputy General Manager (Operations); Rajeev Gandhi, Regional Sales Manager (North)

**Vol. 27, No. 13, for the fortnight June 18 to July 1, 2018.
Released on June 18, 2018.**

● Editorial Office: India Today Mediaplex, FC 8, Sector 16/A, Film City, Noida-201301; Tel: 0120-4807100; Fax: 0120-4807150 ● Advertising Office (Gurgaon): A1-A2, Enkay Centre, Ground Floor, V.N. Commercial Complex, Udyog Vihar, Phase 5, Gurgaon-122001; Tel: 0124-4948400; Fax: 0124-4030919; Mumbai: 1201, 12th Floor, Tower 2 A, One Indiabulls Centre (Jupiter Mills), S.B. Marg, Lower Parel (West), Mumbai-400013; Tel: 022-66063355; Fax: 022-66063226; Chennai: 5th Floor, Main Building No. 443, Guna Complex, Anna Salai, Teynampet, Chennai-600018; Tel: 044-28478525; Fax: 044-24361942; Bangalore: 202-204 Richmond Towers, 2nd Floor, 12, Richmond Road, Bangalore-560025; Tel: 080-22212448, 080-30374106; Fax: 080-22218335; Kolkata: 52, J.L. Road, 4th floor, Kolkata-700071; Tel: 033-22825398, 033-22827726, 033-22821922; Fax: 033-22827254; Hyderabad: 6-3-885/7/B, Raj Bhawan Road, Somajiguda, Hyderabad-500082; Tel: 040-23401657, 040-23400479; Ahmedabad: 2nd Floor, 2C, Surya Rath Building, Behind White House, Panchwati, Off: C.G. Road, Ahmedabad-380006; Tel: 079-6560393, 079-6560929; Fax: 079-6565293; Kochi: Karakkatt Road, Kochi-682016; Tel: 0484-2377057, 0484-2377058; Fax: 0484-370962 ● Subscriptions: For assistance contact Customer Care, India Today Group, A-61, Sector-57, Noida (U.P.) - 201301; Tel: 0120-2479900 from Delhi & Faridabad; 0120-2479900 (Monday-Friday, 10 am-6 pm) from Rest of India; Toll free no: 1800 1800 100 (from BSNL/ MTNL lines); Fax: 0120-4078080; E-mail: wecarebg@intoday.com
● Sales: General Manager Sales, Living Media India Ltd, B-45, 3rd Floor, Sector-57, Noida (U.P.) - 201301; Tel: 0120-4019500; Fax: 0120-4019664
● Printed & published by Manoj Sharma on behalf of Living Media India Limited. Printed at Thomson Press India Limited, 18-35, Milestone, Delhi-Mathura Road, Faridabad-121007, (Haryana). Published at K-9, Connaught Circus, New Delhi-110 001. Editor: Prosenjit Datta
● *Business Today* does not take responsibility for returning unsolicited publication material. All disputes are subject to the exclusive jurisdiction of competent courts and forums in Delhi/New Delhi only

JULY
1, 2018

VOLUME
27

NUMBER
13

CONTENTS

COVER BY
Nilanjan Das

INSIDE
COVER BY
Reuben Singh

26

COVER STORY

INDIA'S WAREHOUSE BOOM

How India stores is changing; Big money sniffs fortune

THE BUZZ

10

THE END

RBI has signalled the end of soft interest rates. This will impact capex and economic recovery

12

ADDING A FOURTH WHEEL

The government has given its nod to a new category of vehicles called quadricycles that will finally see Bajaj Auto's Qute hit the road in India

THE HUB

50

TESTING TIMES

Delhi HC denying Monsanto's patent right over a GM cotton seed has triggered a debate on the path ahead for innovation-led seed companies

84

Operation Cleanup

While the focus on renewable energy has helped, it's time to tackle air and water pollution in a big way.

THE BREAKOUT ZONE

104

NO ROOM FOR PRIVACY

As smart hotel rooms promise to offer utmost convenience, privacy will become elusive

106

BETTER THAN REAL

Augmented reality is set to take the tech world by storm in the wake of new announcements from Apple and Google

BUSINESS-TODAY.IN

STAY CONNECTED WITH US ON
www.facebook.com/BusinessToday@BT_India

PERSPECTIVES

Will e-Commerce Really Wipe Out the Neighbourhood *Kirana* Stores?
No organised retailer understands consumption patterns of a particular locality better than the local grocer. So, how far can Amazon and Walmart succeed in implementing their 'programme' in India's retail market, only time will tell
businesstoday.in/*ecommerce-kirana*

What Is Causing Delay in GST Refunds to Exporters?
Tax authorities are reluctant to accept the applications, ask for irrelevant documents, and are even not following the system of refunds as prescribed in the law. They say refunds will be made once and for all
businesstoday.in/*gst-refunds*

Airlines Report Multiple Engine Failures: Are Indian Skies Becoming Unsafe?
The recent Vistara incidents, involving technical issues, have raised the risk profile of the Indian aviation sector
businesstoday.in/*airlines-safety.issues*

NEWS

Financial Services Becomes Ajay Piramal's Main Business
Piramal Enterprise's performance is in line with Ajay Piramal's philosophy of investing in businesses which can give more than 20 per cent returns in a year
businesstoday.in/*piramal-performance*

India Takes the Lead to Bring Traditional Knowledge Protection Back on WTO Agenda
TRIPS-CBD linkage is important for India and other developing countries because it seeks to address bio-piracy
businesstoday.in/*wto-knowledge.protection*

Significant Decline in Number of Strikes Since 2014
The recent two-day strike of around 10 lakh employees and officers of 21 PSBs, private banks, foreign banks and 56 regional rural banks will certainly have an impact
businesstoday.in/*bankstrikes-impact*

INTEREST RATES

THE END

RBI HAS SIGNALLED THE END OF SOFT INTEREST RATES. THIS WILL IMPACT CAPEX AND ECONOMIC RECOVERY.

By ANAND ADHIKARI

THE PERIOD OF FALLING interest rates that almost started with swearing-in of the NDA government four years ago seems to be coming to an end. During this period, the repo rate, at which banks borrow from the Reserve Bank of India, or RBI, fell from around 8 per cent to 6 per cent. Now, with the RBI raising the rate by 25 basis points, there is a view that India is entering another rate increase cycle. But is it so?

There are enough reasons to believe that this is indeed the case. The RBI has projected consumer price index inflation of 4.85- 4.9 per cent in the first half and 4.7 per cent in the second half of 2018/19. This is above the RBI's target of 4 per cent (+ - 2 per cent). In fact, the RBI was this time way behind the curve as yields on 10-year benchmark government securities had been hardening for the past few months. The market, it seems, sensed the possibility of a rate increase well in advance due to rising crude oil prices and weakening rupee, both of which mean there is a high chance of inflation hardening. In addition, the US Federal Reserve, or US Fed, is already on a rate increase cycle. The unwinding of balance sheet (by selling securities) by the Fed will add further pressure on rates. In fact, RBI Governor Urjit Patel recently wrote in a global financial daily where he appealed to the US Fed to reduce the pace of balance sheet unwinding.

There are a number of indications of interest rates tightening. This will impact economic recovery, capital expenditure cycle and also the consumption story. BT

@anandadhikari

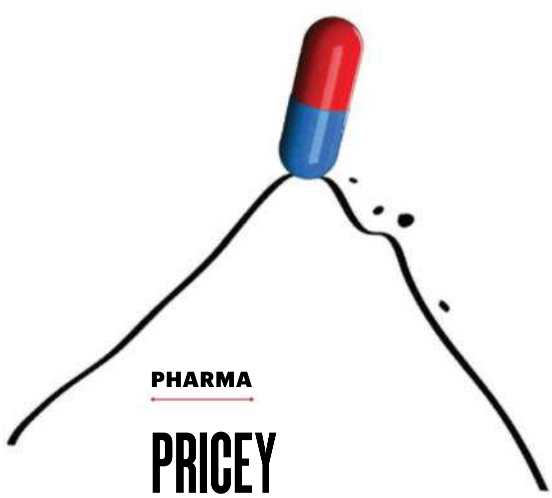

APP'S THE WAY
TO
STAY UPDATED
8:07 PM
INDIA TODAY
LIVE TV
ICC CHAMPIONS TROPHY 2017
HOME
LIVE TV
PROGRAMMES
Congress MP Jyotiraditya Scindia arrested on way to violence-hit Mandsaur
The mysterious case of Gujarat government schoolbags having Akhilesh Yadav pictures
June 13, 2017-05:26 p.m.
Virat Kohli best ODI batsman again after Champions Trophy fifties
June 13, 2017-06:38 p.m.
together
June 13, 2017-06:33 p.m.
Narendra Modi's new India vision will help US job creation: Sean Spicer
Now catch News, Shows, Live Tv and much more on your smartphone with
INDIA TODAY
TELEVISION
MOBILE APP
and stay updated.
DOWNLOAD NOW
AVAILABLE ON

AUTO

ADDING A FOURTH WHEEL

THE GOVERNMENT has given its nod to a new category of vehicles called quadricycles that will finally see homegrown auto major Bajaj Auto's Qute hit the road in India. At close to three years, the wait for Qute has been quite long and frustrating. Largely considered to be an upgrade from the three-wheelers (India is the largest market for three-wheelers with more than 6,00,000 unit sales in FY2017/18 and Bajaj leading the market), quadricycles faced stiff opposition from carmakers who saw them as competition. With stringent safety and emission norms coming into force for cars – sure to hike the price – many feared that the new category (with its greatly relaxed regulations) could be a threat to the entry-level segment. The Qute and other vehicles of its ilk are lightweight at below 475 kg, have a limited top speed of less than 70 km per hour and overall, not very sophisticated, but come with an extra wheel and a closed cabin. They are safer than the rickety three-wheelers that ply on our roads. - **Sumant Banerji**

Bajaj Auto's Qute: A new chapter begins



PHARMA

PRICEY PRESCRIPTION

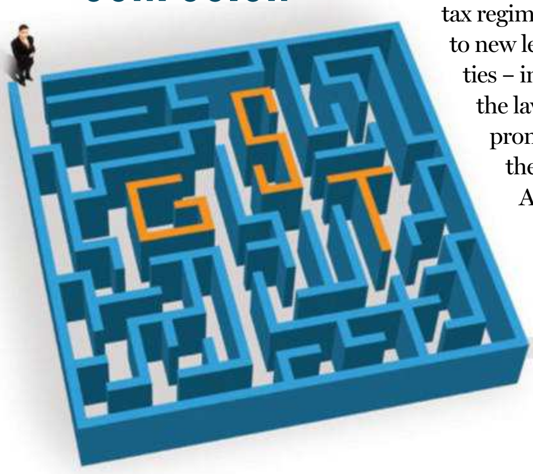
INDIAN PHARMA is on edge with an expected pharma pricing overhaul, but nothing is known yet on the shape of things to come. Industry sources say pharma manufacturers are already battling single-digit growth rate in India and price erosion in the American market. Post GST, the sector even witnessed negative growth for a month or so. While annual growth stood at 12-15 per cent just three years ago, it is now less than 8 per cent.

Understandably worried, industry sources contend that the government's impending amendments to Drug Price Control Order will prove to be a major setback. In fact, the Secretary-General of the Indian Pharmaceutical Alliance has recently pointed out that over the past five years, the industry's annual price increase has been between 1 per cent and 5 per cent.

The million-dollar question is whether the government will go ahead with populist measures at the cost of the entire indigenous pharma industry. - **E. Kumar Sharma**

GST

COMPOUNDING CONFUSION



AFTER THE EARLY hiccups in implementing the Goods and Services Tax (GST), the new indirect tax regime has graduated to new levels of complexities – interpretation of the law. Several recent pronouncements by the Authority for Advance Rulings (AAR) in different states have left both taxpayers and expert advisers in a state of confusion. In some cases, rulings have contradicted the circulars issued earlier by the Central Board of Indirect Taxes and Customs; elsewhere, entirely contradictory rulings have emerged from AARs of separate states.

The AARs were set up to provide taxpayers clarity on their future tax liabilities to minimise future litigation, but this would be a distant dream given the way some of the rulings have been issued.

Meanwhile, the government is reportedly considering setting up a centralised, umbrella AAR to rule on situations where AAR decisions conflict.

- **Dipak Mondal**

GST

Fuelling Hope

FACING HEAT for its failure to cope with increasing crude oil prices, the government finally has some respite in the form of its GST collections for April.

The GST collection in the first month of the current financial year at ₹94,000 crore is a healthy jump from the average monthly collection of ₹89,000 crore in the previous fiscal. A windfall collection from GST in the coming months – especially if it can touch the ₹1 lakh crore mark – will give the government some leeway to play around with populist measures like reducing excise duties.

Experts suggest that collections could be more consistent now that the government has introduced a slew of anti-evasion measures such as the e-way billing system.

On the flip side, collections from GST are still far from the ₹1.05 lakh crore target that is necessary to meet the ₹7.44 lakh crore stated in the Budget estimates. - **Dipak Mondal**

AVIATION

LOW-COST LONG-HAUL FLIGHTS SOON

THE DOMESTIC AVIATION sector seems to be rushing to begin long-haul international flights. After SpiceJet's announcement last year, IndiGo and Vistara reportedly intend to start them. Vistara, for instance, is likely to order six Boeing 787s, an aircraft best suited for long-haul flights. IndiGo, too, is doing a lot of work on how to launch international services over the next few months. Indian carriers, except Air India and Jet Airways, primarily fly to international destinations which are four to five hours away. International flying is a high-margin business and important to tap into, especially as margins in the domestic segment have dipped for some time now. But international flying comes with its challenges, and IndiGo has understood it well. The airline has hired a bunch of expats for senior roles who have experience in managing global operations. However, the Indian carriers will still have to find a way to acquire parking and landing slots at key airports.

- **Manu Kaushik**

SUGAR

INADEQUATE BAILOUT

THE GOVERNMENT'S bailout package for sugarcane farmers is a disappointing short-term measure. It came right after the BJP's defeat in the Kairana Lok Sabha bypoll in Uttar Pradesh.

A recent order by the Cabinet Committee on Economic Affairs fixed the minimum price of refined sugar at ₹29 per kg (mill gate rates) instead of ₹35 that sugarcane growers' associations were hoping for. Since the question of linking sugarcane prices to end-product realisation still stands, sugar mills blocked farmers' payments as the sugar prices fell below production cost.

Given the record production of 31.5 million tonnes in 2017/18 (against the annual domestic demand of 25 million tonnes) fixed the minimum price and the commitment of buffer stock, the sugar industry may accumulate only about ₹8,500 crore. However, it requires ₹22,000 crore to pay farmers' arrears. The need of the hour is an overarching policy rather than a stopgap measure. - **Anilesh S. Mahajan**

IPL

BRANDING MATTERS MOST

THE INDIAN PREMIER LEAGUE (IPL) seems to have regained its lost glory. According to a recent report by brand valuation company, Brand Finance, the brand value of IPL has increased by 37 per cent to $5.3 billion in 2018. In its early years, the tournament was valued at $3 billion, but the valuation had eroded consistently till about 2013 when it was plagued by controversy.

In fact, the 11th IPL season is known to be fruitful for the broadcaster, Star India, who is known to have earned 35 per cent more ad revenues than its predecessor, Sony. The Brand Finance Report says this year's tournament managed to attract a bigger crowd as a considerable number of fans watched the matches online as well as in the IPL fan parks created across 36 cities. "Family-friendly and free to be attended by all, fan parks offered music, entertainment and a range of merchandise stalls, bringing stadium atmosphere to city centres on a scale larger than ever," the report states.

So what does IPL need to do to be as valued as the English Premier League (£11.4 billion)? The IPL franchises (all of them out of the red) need to look beyond profitability and invest significantly in building their brand value. There are a lot of lessons to be learnt from EPL or La Liga. – Ajita Shashidhar

ARTIFICIAL INTELLIGENCE

MYOPIC HANDLING

INDIA'S INSISTENCE on using artificial intelligence (AI) as an application, rather than budgeting for AI advancement technology, could well mean that the country will be left behind in another key sector.

Sample this: Over the past two weeks, two government agencies carried out assessments on AI's potential in the Indian context. A commerce ministry sub-committee examined it vis-à-vis industrial policy while the government's top think tank NITI Aayog wants a debate that will eventually produce a national strategy for AI.

Common ground covered in both reports included smart cities, smart mobility, fintech, and customer engagement. Given that other nations especially the US and China have invested heavily in research and development in AI and robotics – and are already much ahead of India, New Delhi will have to work faster and more efficiently if it is to keep up. - Joe C. Mathew

2,25,910

'Suspected' shell companies struck off so far in FY2018/19 under Section 248 of the Companies Act; as many as 2,26,166 such companies were deregistered last year.

GRAPHITI

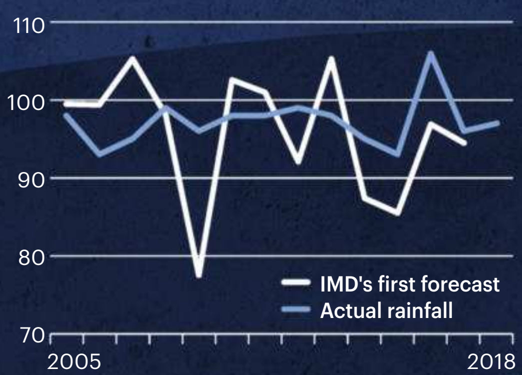
RAIN CHEER

The country is expected to have a normal monsoon for the third consecutive year. This is good news for the economy and the farming sector.

Graphic By **Tanmoy Chakraborty**
Research by: **Niti Kiran**

There is a big gap between the Met department's first prediction and actual rainfall at times

% of long-period average



Source: CMIE

52.32%

SHARE OF TOTAL CROPPED AREA DEPENDENT ON MONSOON AS PER THE LATEST AVAILABLE DATA

17.1%

WATER LEVEL IN 91 RESERVOIRS IN THE COUNTRY AS ON MAY 31, 2018. IN ABSOLUTE TERMS, THIS COMES TO 27.7 BCM

6.7%

THE GROWTH RATE OF GDP AT CONSTANT (2011/12) PRICES FOR FY18, DOWN FROM 7.1 PER CENT IN FY17

33.12%

SHARE OF FARMERS/HOLDINGS RECEIVING IRRIGATION FROM GROUND WATER (WELLS AND TUBE-WELLS), AS PER THE ALL INDIA REPORT ON AGRICULTURE CENSUS 2010/11

3.4%

GROWTH RATE OF AGRICULTURE, FORESTRY AND FISHING SECTOR AS PER PROVISIONAL ESTIMATES FOR 2017/18 AS AGAINST THE PREVIOUS YEAR'S FIGURE OF 6.3 PER CENT

215

THE NUMBER OF DISTRICTS THAT FACED DEFICIENT RAINFALL DURING THE 2017 MONSOON SEASON OUT OF TOTAL 660 DISTRICTS

Last two good monsoons helped keep food inflation under check

CPI Food (%)

Figures are year-on-year change in consumer price index (combined, urban and rural) for food

CALENDAR

HIRING LESSONS

WHAT: FICCI Workshop on Hiring for Success

WHEN: July 5-6, Hyderabad

WHAT TO LOOK FOR: The dynamics of employment have altered drastically over the past few years. Finding the right fit is becoming more challenging for recruiters with the traditional ways of hiring are yielding diminishing returns. To align thinking and action to the changing dynamics of the workplace, FICCI is conducting a two day workshop.

SMART TECHNOLOGIES

WHAT: CII programme on Enabling Technologies for Industry 4.0

WHEN: July 9-14, WMG, University of Warwick, UK

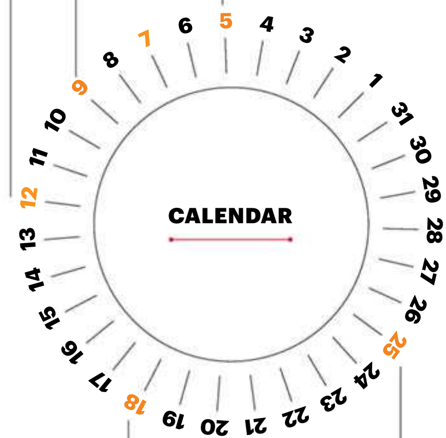
WHAT TO LOOK FOR: The programme, in partnership with the University of Warwick, will focus on digitisation, agile production, smart manufacturing and new technologies. The thrust will be on capturing data, more productive manufacturing systems, use of IoT.

DEBATING INNOVATION

WHAT: India Innovation Summit Karnataka

WHEN: July 12, Banglore

WHAT TO LOOK FOR: The theme of the summit is “India.AI – Driving the future for the world”. It provides a platform for the Indian industry to study innovation across all verticals and understand its importance in the digital era. The summit will brainstorm the trends in AI and impact on learning systems.



TOWARDS INCLUSIVE GROWTH

WHAT: Conference on Human Capital Development for Inclusive Growth

WHEN: July 18-19, Chengdu, China

WHAT TO LOOK FOR: Despite the strong economic growth enjoyed by most Asian countries, some groups are falling behind, often because of the widening gap in income and wealth. This Asian Development Bank event aims to stimulate discussion on human capital development and inclusive growth among policy makers all over the world.

SPOTLIGHT ON NUTRACEUTICALS

WHAT: National Symposium on Nutraceuticals

WHEN: July 25, New Delhi

WHAT TO LOOK FOR: The nutraceuticals (functional foods) industry is a strong pillar of the fitness revolution in India. The Indian nutraceuticals market is estimated at around $4 billion. The Assocham event intends to help the industry remain competitive.

URBANISATION AND DEVELOPMENT

WHAT: Urban Development and Economics in the Developing World

WHEN: August 7-8, Shanghai, China

WHAT TO LOOK FOR: Many developing countries are poised to experience a dramatic increase in urbanisation over the next few decades, bringing opportunities and challenges. Harnessing the potential of urbanisation for economic development is critical and the conference will debate how it can be done.

U.S. UNEMPLOYMENT DIPS TO 3.8%

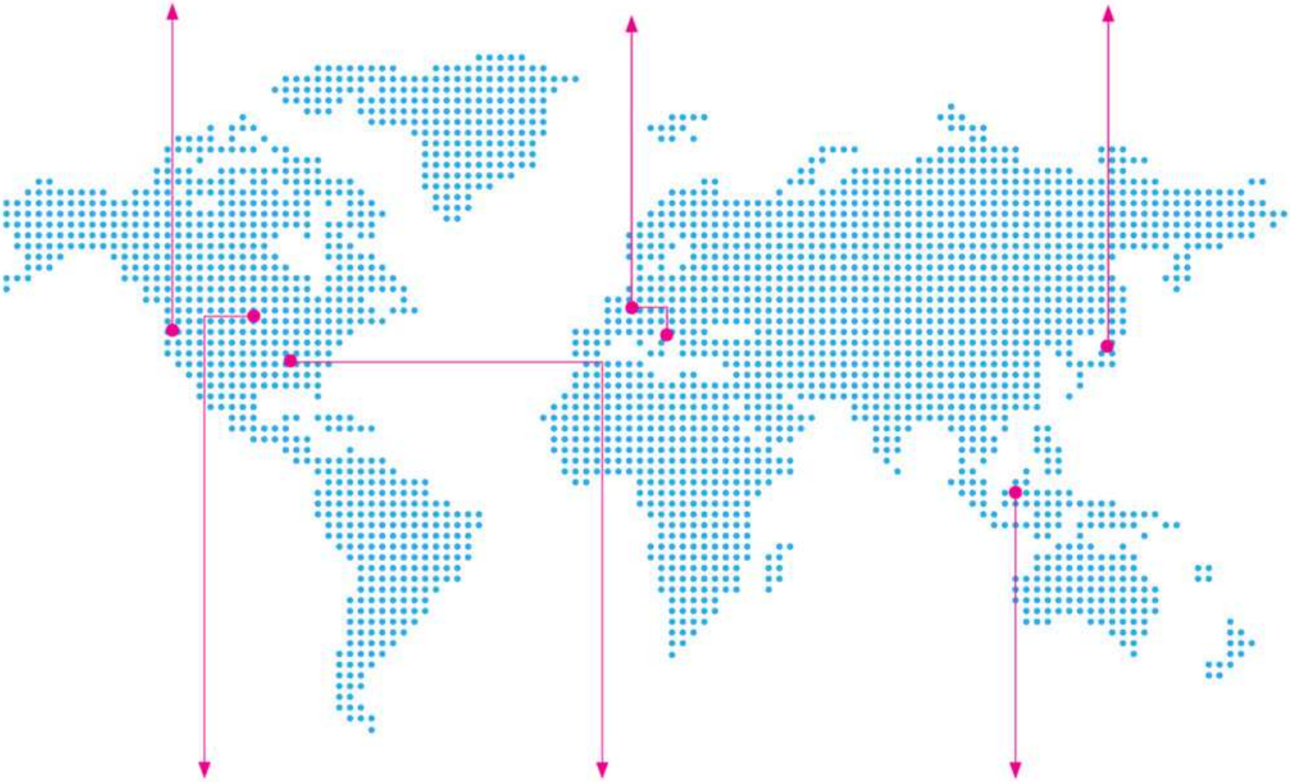
The U.S. unemployment rate dropped to 3.8 per cent in May, the lowest in 18 years, as per Labor Department data. The economy added 2,23,000 jobs, recording strong growth across sectors, although wages grew at a modest 2.7 per cent. Black unemployment also fell to a record low. However, the employed percentage of America's population stands at 60.4 per cent, well below pre-recession levels.

UNICREDIT, SOCGEN MULLING MERGER

Italy's biggest bank UniCredit SpA is mulling a merger with Société Générale S.A. (SocGen), the second biggest bank in France, an *FT* report says. The tie-up could pave the path for similar mergers across the EU. Talks are at an early stage due to the political volatility in Italy although UniCredit's French CEO Jean-Pierre Mustier, a former head of investment banking at SocGen, has been planning it for months.

SHARP ACQUIRES TOSHIBA'S PC BUSINESS

Japan's display maker Sharp, now owned by the Taiwanese manufacturing giant Foxconn, is buying Toshiba's troubled PC business. Sharp will pay $36.5 million for an 80.1 per cent stake and also issue $1.8 billion in new shares to buy back preferred stock held by banks that previously bailed out Sharp. The move marks Sharp's re-entry to PC manufacturing, which it exited in 2010.



MICROSOFT TO BUY GITHUB FOR $7.5 BN

Microsoft is buying the open-source coding platform GitHub in an all-stock deal worth $7.5 billion. San Francisco-based GitHub provides coding tools to more than 28 million developers and claims to be the largest code host. The deal will bolster the Windows maker's pivot to cloud services, undertaken by CEO Satya Nadella, and help the company compete better with the likes of Amazon.

HOWARD SCHULTZ TO STEP DOWN

Howard Schultz of Starbucks will leave his current position as Executive Chairman at the end of June, raising speculation about a bid for the U.S. presidential run. Schultz, 64, bought Starbucks in the late 1980s and went on to set up about 28,000 outlets in 77 countries. Asked about his political aspirations, Schultz said, "I intend to think about a range of options, and that could include public service.

PETRONAS BUYS 25% IN CANADA LNG PROJECT

A year after Malaysia's state-owned Petroliam Nasional Bhd called off its $28 billion LNG export terminal in British Columbia, it is buying a 25 per cent stake in a $31 billion LNG export project in Canada, led by Royal Dutch Shell. Petronas abandoned its plans last July, citing spiralling costs and falling prices, but had no Plan B to ship the gas produced by its Progress Energy Canada unit to Asia.

Changing Schools

THE GOVERNMENT SHOULD ALLOW PRIVATE COMPANIES TO SET UP SCHOOLS.

BY AARUSHI JAIN

VIVEK KATHPALIA

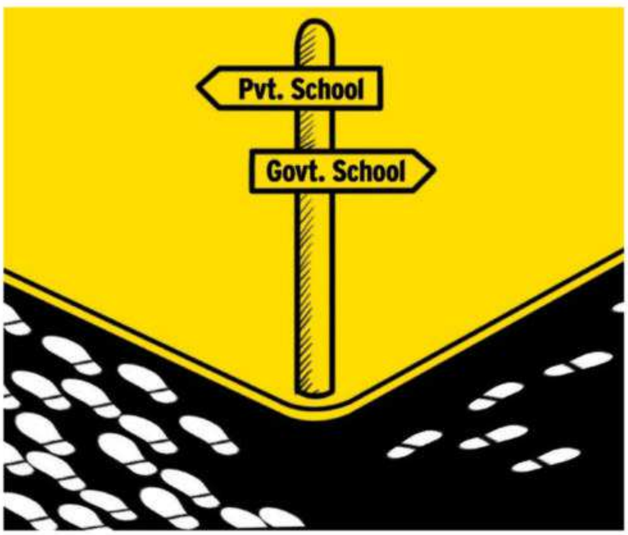
ENSURING ACCESS TO education is the responsibility of the government. But no matter how much it tries, the government alone cannot provide good quality education to everyone. It has to rely on the private sector to shoulder the mammoth task of 'Education for All'.

Some of the best schools are private schools. Even parents from lower income groups prefer low-cost private schools over government schools. As the role of the private sector is so crucial, why isn't the government making it easier for them to function?

Education is a capital-intensive sector, and money is required to buy/lease/hire land, building, infrastructure, facilities, staff, technology, et al. The government is certainly not in a position to meet these capital requirements. It is barely able to provide (if at all) right-to-education reimbursements to private schools.

Private schools, therefore, depend on their earnings, private grants or third-party borrowings to meet their capital requirements. Lenders are not comfortable about financing schools because of the 'not-for-profit' format as schools need to be set up by a public charitable trust or a registered society.

Different states have different society and trust laws (some do not even have trust laws), and the provisions are not uniform across states. The functioning of these trusts and societies can be very opaque as much of it is governed by their internal charters. Regulatory oversight is at the bare minimum, and it affects the comfort level and business structure of investors and lenders.



A private limited company, on the other hand, is a well-established form of entity. It sits within a robust legal and regulatory framework, and there is transparency in its functioning. If schools are permitted to be set up as companies, not only will it be easier for them to raise capital, but their functioning will also become transparent. It will improve corporate governance across the education landscape and benefit all stakeholders.

Then why is the government hesitant to allow a private limited company to set up schools? Shouldn't the laws change with changing times?

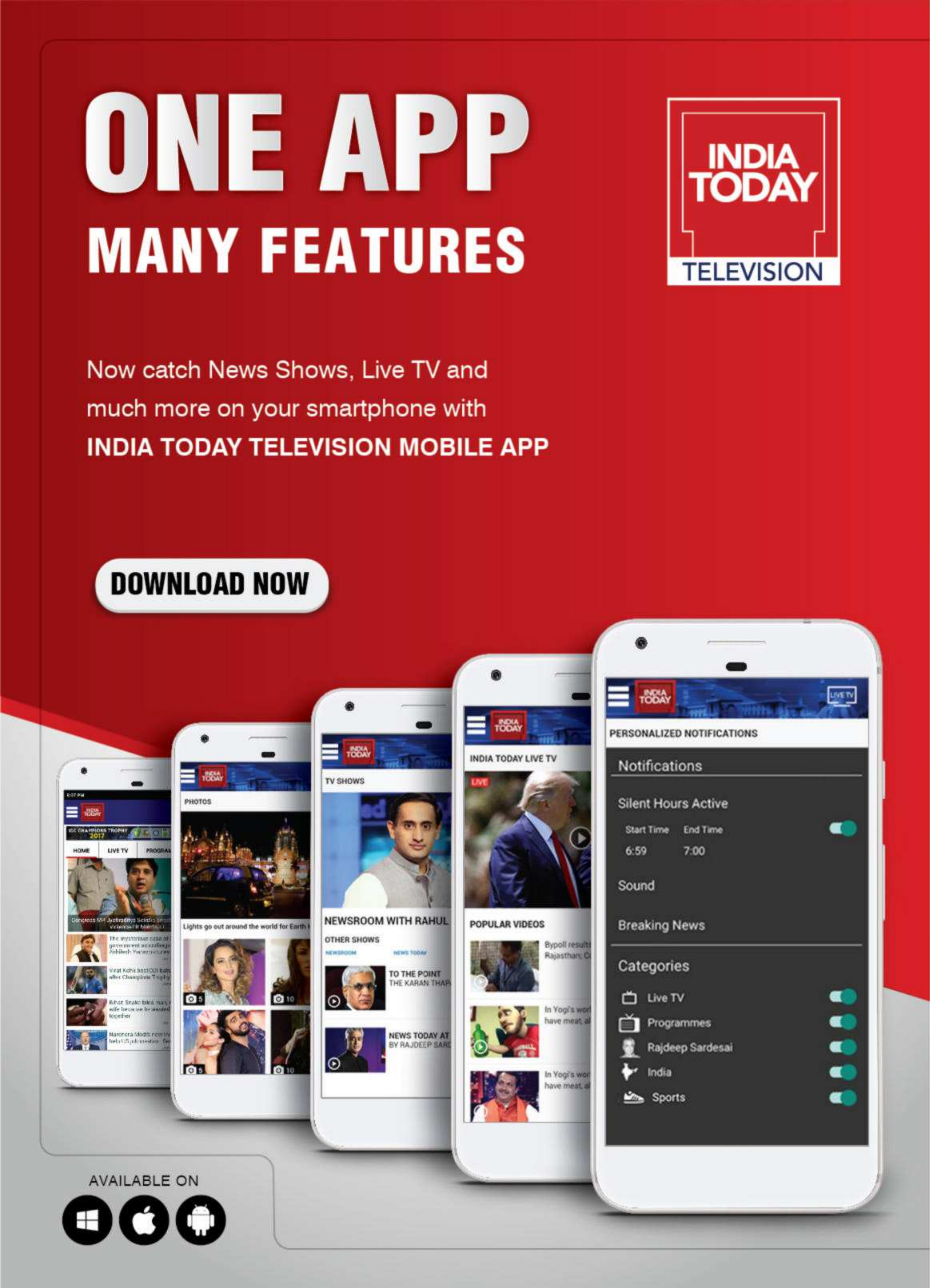
State governments need to realise that earning from educational activity is not a bad thing. And let us be honest, it is happening even now. The Supreme Court has also said that educational institutions are entitled to have a surplus or generate profits, provided the surplus so generated is used for the benefit of the educational institution. This principle can be easily followed in a school set up by a private company.

While we are, in principle, against fee regulation of private schools, laws dealing with capitation fees, if not misused, do have a purpose to serve. There are adequate checks and balances in place to ensure that there is no capitation fee charged and the school is functioning within its permission parameters.

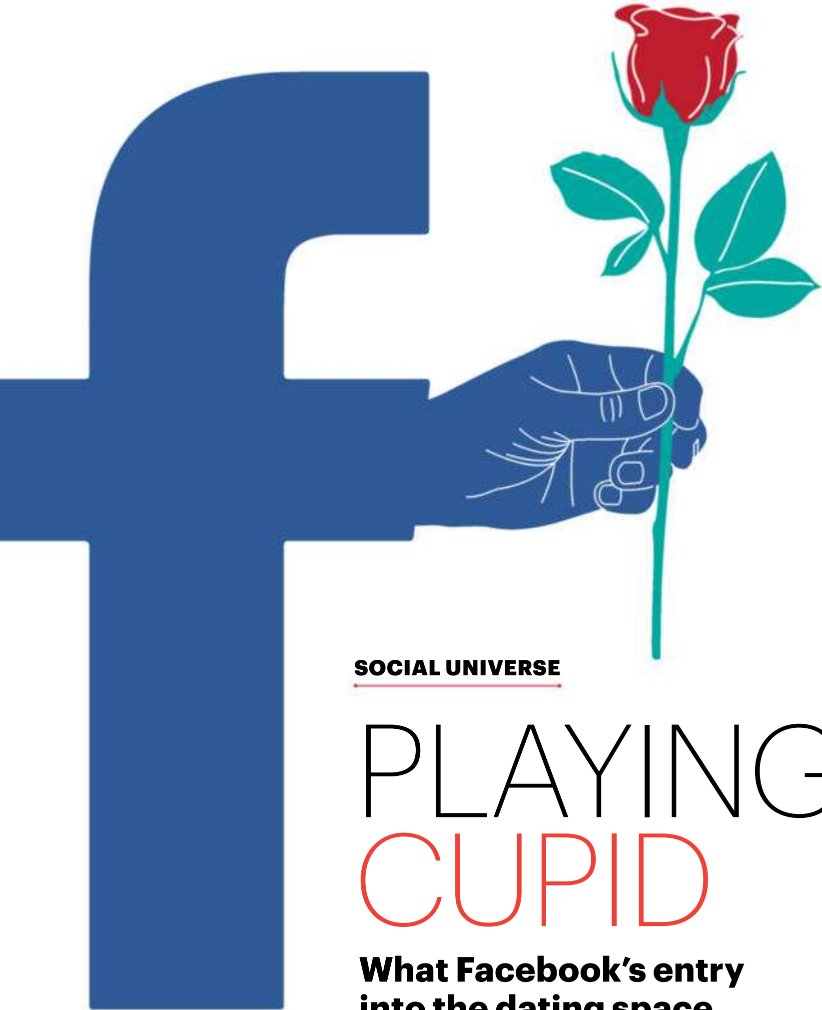
Haryana is one state that has already allowed private companies to set up schools. Recently, the Medical Council of India has allowed private limited companies to set up medical colleges. Such progressive changes are to be welcomed.

To conclude, allowing or not allowing a for-profit structure in K-12 is nothing but a form over substance issue. State governments should realise that private schools, at all levels, need to function in a structure that is more transparent and easier to finance. BT

Vivek Kathpalia is Global Leader, Education Practice, and Aarushi Jain is Leader, Education & IP Practice, at Nishith Desai Associates



ONE APP
MANY FEATURES
INDIA TODAY
TELEVISION
Now catch News Shows, Live TV and
much more on your smartphone with
INDIA TODAY TELEVISION MOBILE APP
DOWNLOAD NOW
PERSONALIZED NOTIFICATIONS
Notifications
Silent Hours Active
Start Time
End Time
6:59
7:00
Sound
Breaking News
Categories
Live TV
Programmes
Rajdeep Sardesai
India
Sports
INDIA TODAY LIVE TV
POPULAR VIDEOS
TV SHOWS
NEWSROOM WITH RAHUL
OTHER SHOWS
PHOTOS
AVAILABLE ON



SOCIAL UNIVERSE

PLAYING CUPID

What Facebook's entry into the dating space means for other players.

By Devika Singh
Illustrations by Raj Verma

FACEBOOK is taking its relationship with users to another level – from helping people forge friendships to now helping them find love. The social networking site will soon introduce a dating service. An 'obvious move' given its gargantuan user base. While singles are waiting for the service with bated breath, dating apps aren't upbeat. In fact, the shares of Match Group, a company that owns dating services such as Tinder, OkCupid and Match.com, took a plunge in the stock market after Facebook's announcement. Experts predict that the move will impact the Indian dating market that has global players Tinder, OkCupid and Coffee Meets Bagel, as well as start-ups such as TrulyMadly and Woo.

According to online market research firm Statista, the Indian dating services market is worth \$182 million in 2018, of which the share of matchmaking segment is \$156.5 million, online dating is \$13.3 million and casual dating is \$12.2 million. The overall market is expected to grow to \$238 million by 2022. Statista defines a matchmaking site as a platform for searching life partners, online dating site as one for easy flirting and chatting, and a casual dating site as one where users look for non-committal sex. As Facebook is trying to position itself as a facilitator of 'long-term relationships' and not 'casual hook-ups', its foray is going to shake up not only online dating apps but also matrimonial sites such as Shaadi and Bharat Matrimony. Rohit Raj, Co-founder and Creative Chief at The Glitch, says existing players will have to make "considerable changes" to their model. There is more reason to worry for online matchmaking services and dating apps that let users create a profile using their Facebook accounts. Sumesh Menon, Co-founder and MD of Woo, says it is unlikely that Facebook will forbid these users from accessing their profiles. But the amount of data and insight Facebook has gathered over time is incomparable.

Sachin Bhatia, CEO and Co-founder, Truly Madly, is unperturbed by Facebook's entry. He says the vast number of fake profiles on Facebook would create problems. Dating apps, meanwhile, only list verified profiles.

The anonymity these apps offer to users is a big plus. On other dating sites, you are matched with people you don't know, whereas on Facebook, one could get matched with a friend's friend or an acquaintance.

Pavel Naiya, Senior Analyst at Counterpoint Research, says that as most dating apps and matchmaking services follow the subscription model, they would face challenges in India; but not Facebook since it runs on an advertising-based model. BT

@DevikaSingh29

Longer Videos

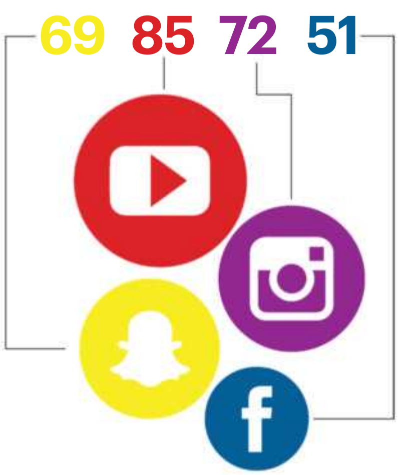
INSTAGRAM will soon introduce longer videos with an eye on monetisation. Currently, the image sharing social network lets users upload 60-second video clips, though users can live stream longer videos. However, with the new feature they would be able to upload almost 60-minute-long videos.

SING ALONG

FACEBOOK has rolled out a lip syncing feature in select markets, similar to Dubmash and Musical.ly apps, in a bid to appeal to the younger audience. In the testing phase, there are hundreds of songs to choose from. Users can use the feature while live streaming too. Users can also select masks and backgrounds to customise their videos.

EAR ME LOUD

SNAPCHAT'S latest lens addition to its catalogue is one that reacts to sound. Earlier, the company had launched lenses that could react to facial expressions, augmented reality lenses and full body AR lenses. The new filter is an animal mask overlay with a heart, nose, whiskers and glowing ears; when a sound is picked by the microphone on the user's smartphone, the ears expand.



Pew Research Center survey states that 51 per cent of US teens, between 13 and 17, use Facebook; 85 per cent go on YouTube; 72 per cent use Instagram; and 69 per cent are on Snapchat

START-UP

ENGINEER.AI

CUSTOM SOFTWARE BUILT ON **ASSEMBLY LINE**

THE MAN-MACHINE COLLABORATIVE PLATFORM OFFERS A BUILD-INSURE-OPERATE MODEL FOR SMBs.

By Sanghamitra Mandal

KEY NUMBERS

FOUNDED IN
2016

CUSTOMERS:
3,500,
including SMBs and big corporate houses such as Eros Now, Videocon, HSBC, SF Giants and Deutsche Bank

REVENUE
Operationally profitable and earned around **$24 million** in sales in 2017, as per company data

ACTIVE IN
India, the US and Europe; to expand in China, Japan and West Asia in 24-36 months

EMPLOYEES
150

1) The Founders

Sachin Dev Duggal and his college mate Saurav Dhoot. Duggal, a serial entrepreneur, holds an engineering degree from Imperial College, London, and a master's degree in entrepreneurship from MIT. The duo set up their first company Nivio in 2004. They cashed out in 2012 and started SD Squared that finally evolved into Engineer.ai.

2) The Idea

"A decade ago, 'tech' was just a tag, but now, it is a must-have," says Duggal. "However, for millions of SMBs in India and elsewhere, buying expensive software or hiring in-house IT teams is not a viable option. So, we have built tech solutions to turn ideas into products at double the speed and tailored pricing."

3) How It Works

Customers can specify their concepts with the help of a drag-and-drop features menu on a human-assisted and AI-powered cloud platform called Builder. Here applications are developed in an assembly line manner to ensure speed, scale and cost efficiency. Simply put, each project is broken down into building blocks, and up to 60 per cent of the work is done by AI tools and automated processes. As most of the applications have standard features and repeat codes, these are automatically assembled in projects as per requirements and customers only pay for unique coding. The 'custom' part of the work is allocated to domain experts from a network of 50 software firms and 10,000 developers. Support and maintenance are provided for a monthly fee.

The start-up is also into cloud arbitrage and offers CloudOps, an AI-based cloud management platform for businesses to ensure smart usage and cost benefits. Plus, there is a prepaid card for buying cloud storage capacity.

4) Growth & Future Plans

The company is currently bootstrapped – the proceeds from the Nivio sale have been invested here. It has offices in Gurgaon, Mumbai, San Francisco, Los Angeles and London, and claims to be growing at 100 per cent YoY. It is also working on its latest offering 'Team' to grow the number of its capacity partners to two million so that around 1,000 projects could be developed concurrently. BT

Saurav Dhoot (left) and Sachin Dev Duggal

FACULTY OF SCIENCE AND HUMANITIES

SRM
INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University u/s 3 of UGC Act, 1956)

Chennai Campus - Kattankulathur

TRANSFORMING GOOD MINDS TO GREAT MINDS

ADMISSIONS 2018

UG Programs

B.A
- English
- Journalism & Mass Communication
- Music
- Bharatanatyam

BBA
Business Administration

B.Ed Education

BCA

B.Sc
- Hotel Management & Catering
- Mathematics
- Physics
- Chemistry
- Biotechnology
- Computer Science
- Visual Communication
- Fashion Designing
- Physical Education

B.Com
- Commerce
- Corporate Secretaryship
- Accounting and Finance
- Information & System Management

B.Com (Honors)
- International Accounting and Finance
- Professional Accounting

Diploma
- Hotel Management
- Yoga

PG Programs

M.A
- English
- Journalism & Mass Communication

M.Sc
- Mathematics
- Physics
- Chemistry
- Biotechnology
- Information Technology
- Visual Communication
- Quantitative Finance

M.Com Commerce

M.Ed Education

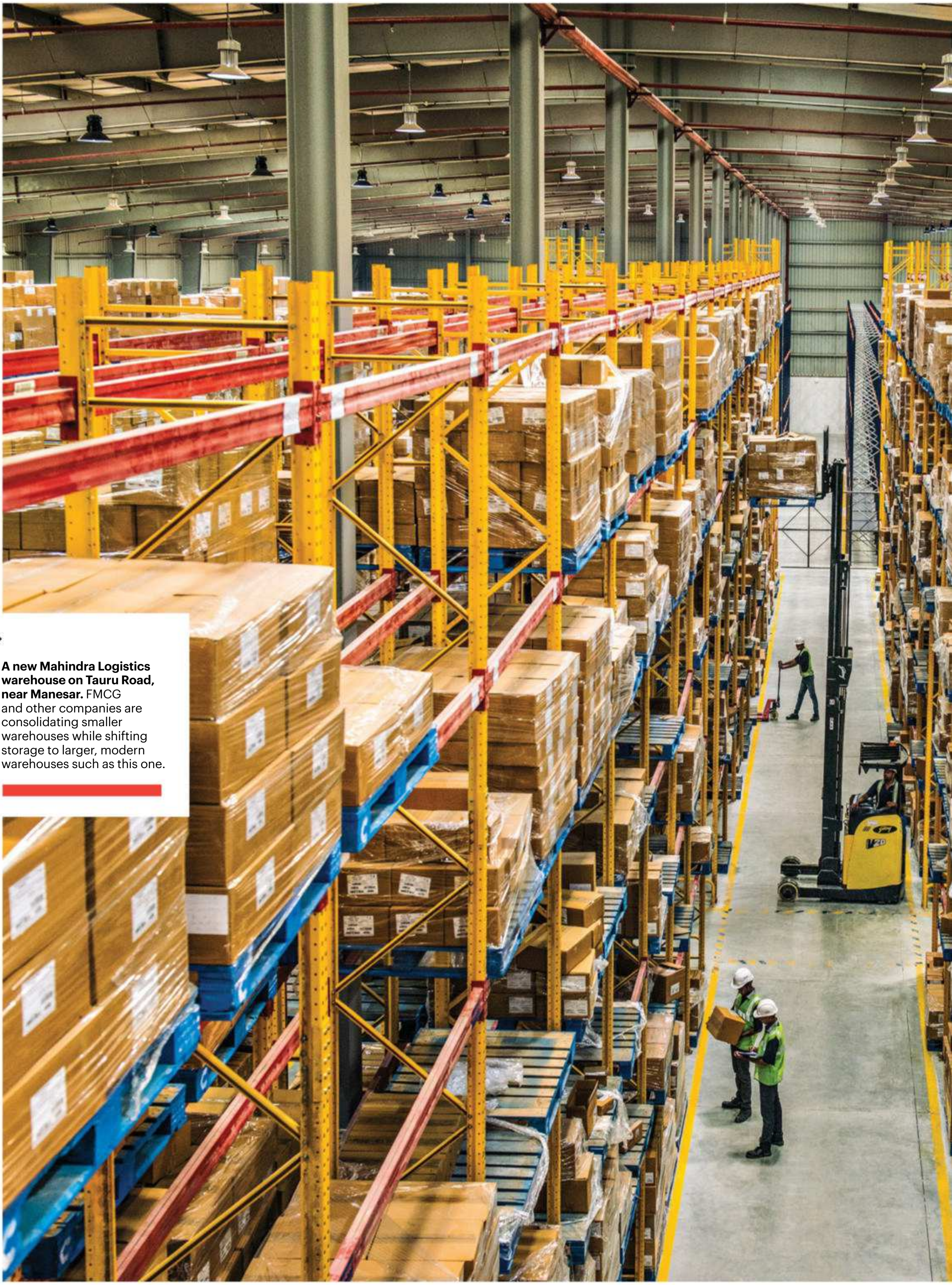
M.Phil Education | Physical Education

Ph.D in all disciplines

How to Apply: Apply online with e-payment or DD payment, with application fee of ₹1100

For details, visit: www.srmuniv.ac.in

SRM Institute of Science and Technology
Kattankulathur, Kancheepuram District, Tamil Nadu - 603 203
Tel: +91 44 2745 5510, 4743 7500 | Email: admissions.india@srmuniv.ac.in



A new Mahindra Logistics warehouse on Tauru Road, near Manesar. FMCG and other companies are consolidating smaller warehouses while shifting storage to larger, modern warehouses such as this one.

INDIA'S WAREHOUSE BOOM

HOW INDIA STORES IS CHANGING; BIG MONEY SNIFFS FORTUNE

BY GOUTAM DAS
PHOTOGRAPH BY REUBEN SINGH

HOW WAREHOUSING IS CHANGING

BEYOND POSTERS PROMISING 'Total Repair', 'No Ammonia Glossy Hair Colour', and 'New Baby Lips', are racks, and more racks.

Brown boxes, kept on blue pallets, occupy nine lines of yellow and red multi-tier racks in this 60,000 square feet (sq ft) block of steel, 13.5 meters high. There are two more blocks of similar size which aren't operational just as yet, but already booked to capacity. As of now, the brown boxes store L'Oréal's promise — shampoos, face washes, shades, creams. Soon, L'Oréal would share the floor with a kitchen storage brand.

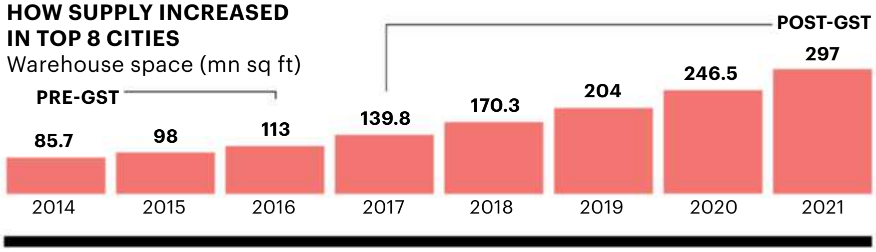
This Mahindra Logistics Ltd. warehouse, a third party logistics provider, started two months ago and mimics modern factory best practices in many ways. There is a specific path to walk. Battery-operated material handling equipment vehicles, supplied by Godrej, move around on the rest of the floor at no more than 5 kilometres an hour. People who move these machines, scan the boxes and load or unload from trucks have to ensure they wear a bump cap, earplugs, gloves, steel toe shoes and long sleeve shirts that must be tucked into full length pants.

The warehouse is on Tauru Road, near Haryana's industrial hub of Manesar. As you veer off from National Highway 48, towards Tauru, tea and juice shanties gradually give way to small fields and buildings with trucks parked. Further down, warehouses beeline on both sides of the road, a few under construction.

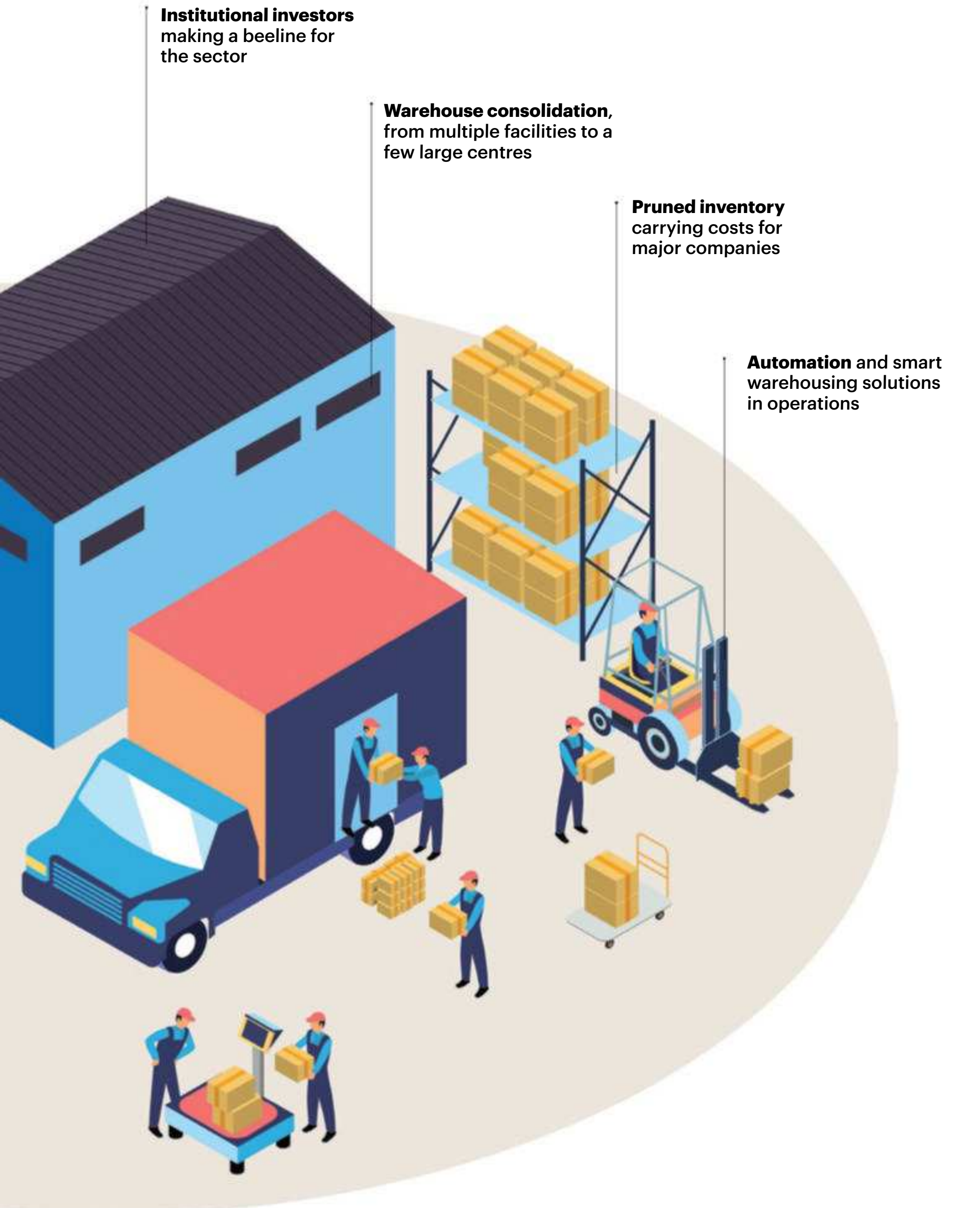
Source: Knight Frank

GRADE A AND B WAREHOUSES: HOW SUPPLY INCREASED IN TOP 8 CITIES

Warehouse space (mn sq ft)



Source: JLL



PROJECTED INVESTMENTS: WAREHOUSING

WAREHOUSE
35,000

COLD STORAGE
4,000

AGRI STORAGE
3,500

CONTAINER STORAGE
500

OVERALL
43,000

Figures in ₹ crore
Source: JLL

Across the road from Mahindra Logistics' new warehouse is that of Ecom Express' fulfilment centre, another "end-to-end" logistics solutions company but focussed on the e-commerce industry. It is surrounded by agricultural land and the half a million sq ft warehouse is big enough for over 200 vehicles to come in and park inside its compound.

Inside, is a spiral gravity roller conveyor that can transfer packets from vertical racks to the ground floor using gravity. It saves both manpower and power. Part of the racks here store products of the personal care brand VLCC. A majority of them have bins with baby dresses, tees, shorts, socks from online retailer Hopscotch. Go up the racks to the top, and you would see four employees in green aprons prepare boxes on the ground floor. Another three scan the dresses before sealing them into the boxes, once an order hits the warehouse management system. A few push trolleys around. High value shipments, worth more than Rs 10,000, are locked up in them.

Unless you hit the highways, you would mostly not see these huge steel 'boxes'. Perhaps, you would never realise that these warehouses form a crucial link — between manufacturers and the shampoo you buy from the local retailer, the 43-inch television you want in two days, the phone you have ordered on either Flipkart or Amazon and expect it delivered the next day, or the pasta sauce to make dinner you need in two hours. The turnaround time, or the time taken to deliver since ordered by either the consumer or the retailer is as important for L'Oréal and VLCC as it is for the ITCs, the Unilevers, and the consumer durable companies such as Samsung and Whirlpool. They all manufacture their wares, ship out, and during various stages of transportation, store the products in strategic locations so it can be delivered in quick time, whenever they see demand. In the case of e-commerce, the warehouses also ensure that the parcel you receive has the correct product ordered, that it hasn't been tampered, and safe.

MORE THAN ₹10,000 CRORE INVESTED IN WAREHOUSING IN 2017

Investor/Investee	
Ascendas/FirstSpace	3,800
CPPIB/IndoSpace	3,200
Macquire+Ivanhoe/ Logos+Assetz	2,800
Ascendas/Arshiya	534
Alibaba/XpressBees	224

FIGURES IN ₹ CRORE
Source: JLL

Warehouses have always existed but what's new is the way India stores. It is changing. And that is visible in the two warehouses of Mahindra Logistics and ECom Express. These are modern warehouses that require mammoth investments. These two companies are asset-light third party logistics players but there are those who are buying huge parcels of land to develop logistics parks. It is a real estate play, after all. Real estate services firm JLL estimates that India's quality warehousing stock in top eight cities totalled 140 million square feet (sq ft) in 2017 — that is roughly the size of about 10 presidential estates — the Rashtrapati Bhawan, along with its lovely Mughal Gardens, open spaces, staff quarters and offices among other things. By the end of 2020, the supply is expected to increase to 247 million sq ft, or 18 Rashtrapati Bhawans.

The firm estimates that close to ₹45,000 crore would be invested in creating storage facilities across India between 2018 and 2020. Of this, warehousing is expected to be the chunkiest at more than three quarters of the estimated investment. Cold storage, agri storage, and container storage form rest of the pie. Institutional investors are in business. According to Knight Frank, a property consultancy, warehousing investments accounted for around 26 per cent of the total private equity (PE) investments into real estate between January 2014 and January 2018. Global PEs such as Ascendas-Singbridge, Warburg Pincus and Brookfield Asset Management among others pumped in \$3.4 billion (₹22,100 crore) of institutional capital during this period. The property consultancy added in a report that the "actual size of capital movement would be higher, as these numbers only cover the major investments by organised players".

WHAT WAS; WHAT IS

Indian warehouses, particularly, in the unorganised sector, were not really warehouses — they were godowns.

"Many of them are in terrible shape. In monsoons, the roof leaks. When temperatures rise in the summers, it can damage electronic items. The floor quality, the heart of the warehouse because the throughput depends on it, is in poor shape as well," says the CEO of Embassy Industrial Parks, Anshul Singhal.

Concrete or low quality steel godowns are now being replaced by steel structures, which are pre-engineered in factories and then assembled at the location. Modern

ECOM EXPRESS CO-FOUNDERS SANJEEV SAXENA (R) AND K. SATYANARAYANA AT THEIR WAREHOUSE **ON TAURU ROAD. THE COMPANY RUNS 16 WAREHOUSES AND WILL ADD 12 MORE THIS YEAR.**

warehouses are water proof, have good ventilation, and insulation to reduce the temperature inside that make it comfortable for those working. Every inch is covered by CCTV camera to avoid theft. Outside, planned wide roads ensure trucks come in and leave without a traffic jam. Embassy, as its name suggests, is building parks. Similar to a business park, its warehousing park would offer business centres, green areas, sewage systems, truck parking, the electrical infrastructure, ATMs, first aid centre, driver rest areas.

The way India stores is changing, particularly, after GST was enforced in 2017.

Fast moving consumer goods (FMCG) companies, consumer durable and other manufacturing firms are consolidating smaller warehouses across multiple states, set up to be tax efficient, into a few strategic but large ones considering India is now a single tax country.

Logistics companies have tight hugged the opportunity. From managing single company warehouses, they are shifting to a multi-client, multi-product model. The French FM Logistic, for instance, runs 83 warehouses in India. Only one of them, in Bhiwandi near Mumbai, is a multi-client one. "Post GST, we decided on multi-client facility. Larger e-commerce players like Amazon prefer to have dedicated warehouses. But the small

PHOTOGRAPH BY MANDAR DEODHAR

A WORKER AT FM LOGISTIC'S MULTI-CLIENT WAREHOUSE IN BHIWANDI. TEAMLEASE EXPECTS THE WAREHOUSING SECTOR TO CREATE 120,000 INCREMENTAL JOBS BETWEEN 2018 AND 2022.

e-commerce players can take advantage of our multi-customer facilities because you need huge flexibility and there are peaks, like during Diwali," Jean-Christophe Machet, President and CEO of FM Logistic, says.

As companies consolidate operations in large warehouses, they can cut down on cost. Larger warehouses also lend themselves better to automation, which implies a quicker turnaround.

The spurt in demand has led to real estate prices and rentals rising in some regions, like that on Tauru Road and in Bhiwandi. The demand for quality warehouses is far outstripping supply at the moment. While new warehouses are coming online nearly every month, the supply scenario isn't going to change anytime soon. According to industry watchers, it could take nearly two years for the market to be flooded with enough 'Grade A' and 'Grade B' stock, the industry's lingo for better warehouses. 'Grade C' is a godown.

WHO'S WHO

Which cities are attracting Grade A and B investments?

Bhiwandi, near Mumbai, is the largest warehousing market in the country in terms of the space for warehouses. It is closest to the largest port. However, the National Capital Region is becoming a hotbed to locate warehouses catering to North India.

Knight Frank states that transaction volumes of warehousing space has jumped 85 per cent in 2017 to 25.7 million sq.ft across India's top eight cities or Mumbai, NCR, Ahmedabad, Bangalore, Pune, Chennai, Hyderabad and Kolkata. Transactions in Mumbai and NCR contributed nearly half of the 25.7 million sq ft of transactions last year. The volumes were driven by third party logistics players, manufacturing and retail companies. The company's India Warehousing Market Report 2018 found that among cities, Mumbai had the highest growth at 231 per cent (5.2 mn sq. ft), followed by NCR that jumped 129 per cent (6.5 mn sq. ft), and Bangalore at 90 per cent (2.5 mn sq. ft). NCR's jump is significant because it was from a higher base of 2.8 mn sq. ft in 2016.

In 2017, Amazon had 41 Fulfilment Centres (FCs) with a storage capacity of 13 million cubic feet in 13 states. Today, Amazon has 62 in 13 states with a storage capacity of 16 million cubic feet. Of the 62 FCs, Amazon has a specialised network to support just the growth of the large appliances and furniture category and another specialised network of 15 FCs to support the growth of Amazon Now, its grocery delivery business.

Mahindra Logistics' warehousing capacity shot up 30 per cent to over 13 million sq ft in 2017/18. French Logistics company FM Logistic acquired Pune-based company Spear to get a foothold in India. It is looking to double storage from the current 3 million sq ft over the next three years. Ecom Express has 16 warehouses and is adding a dozen more to its tally this year. The relatively new Embassy Industrial Parks has about 6 million sq ft under construction and over the next four years, plans to build another 20 million sq ft.

The growing demand for logistics (overall, logistics is a $260 billion industry) has interested Big Money. The sector needs Big Money because the business requires a lot of capital. It involves buying of land, after all. Although it is a variable math, the cost of construction on a 100 acre parcel could be anywhere close to ₹300-400 crore.

In 2015, real estate developer Embassy Group formed a joint venture with Warburg Pincus to establish Embassy Industrial Parks that will have an equity commitment of up to $250 million (₹1,625 crore) from its joint venture partners to fund land acquisition and development. In April 2017, Singapore-based property developer Ascendas Property Fund Trustee acquired six warehouses from Arshiya Limited for ₹534 crore. Arshiya operates two Free Trade & Warehousing Zones in Panvel, near Mumbai, and a logistics park at Khurja, near Delhi.

One of the biggest in the warehousing park business is IndoSpace, a joint venture between private equity firm Everstone Group and industrial real estate firm Realterm. IndoSpace says it has a portfolio of around 30 million sq ft across developed, under development, and planned projects.

Rajesh Jaggi, Managing Partner, Real Estate, Everstone Group says he has closed a third fund, a $550 million one, and has started deploying the money. Along with the earlier funds, the money invested in the JV would be upwards of a billion dollars.

"INDOSPACE HAS A PAN-INDIA PORTFOLIO OF AROUND 30 MILLION SQUARE FEET ACROSS DEVELOPED, UNDER DEVELOPMENT AND PLANNED PROJECTS."

Rajesh Jaggi
Managing Partner,
Real Estate, Everstone Group

PUSH: NEW POLICIES

Driving investor interest in storage is India's consumption story, and a more aggressive buying behaviour.

"One of the main catalysts has been e-commerce, which is the new normal. In other countries, it is same day delivery or half-day delivery whereas in India, we are still trying to achieve next day delivery. We will get there pretty soon," Singhal of Embassy Industrial Parks says.

"Any major consumption centre — Mumbai, Bangalore, Pune, NCR, Chennai, Kolkata and cities such as Lucknow, Indore, Ahmedabad, Surat, Kochi, Coimbatore — are seeing the same buying behaviour. People can afford more and they want more choice. If all of this is to be serviced properly, you need a lot of storage space."

Second, is the role of the government. The Centre's interest in pushing through reforms and policies around logistics has investors enamoured. "Unprecedented," quips the CEO of Mahindra Logistics, Pirojshaw Sarkari. Many policy changes, in quick succession, are the government's way of preparing the ground for Make in India, he thinks. "If you want to promote Make In India and your logistics costs are at 14 per cent of the GDP, you can never promote manufacturing. Logistics costs in advanced countries are well below 10 per cent. There are inefficiencies in our logistics," he says. "Various policies, right from GST to the infrastructure status to warehousing is an enabler for logistics."

Finance Minister, Arun Jaitley, approved "infrastructure status" to the Logistics sector in November 2017. Logistics infrastructure includes multi-modal logistics park comprising inland container depot with minimum investment of ₹50 crore and minimum area of 10 acre, cold chain facility with minimum investment of Rs.15 crore and minimum area of 20,000 sq. ft, and warehousing facility with an investment of minimum ₹25 crore and minimum area of one lakh sq ft. "It will enable the logistics sector to avail infrastructure lending at easier terms with enhanced limits, access to larger amounts of funds as external commercial borrowings, access to longer tenor funds from insurance companies and pension funds and be eligible to borrow from India Infrastructure Financing Company Limited," the government said in a note when the announcement came. The government had earlier approved the Sagarmala programme to modernise as well as develop new ports. Along with the growth of regional airports, it could be a stimulant to the sector, going ahead.

"ONCE THE INDUSTRY IS ORGANISED AND THERE IS STANDARDISATION, WE CAN OPTIMISE AND THE COST OF LOGISTICS WILL GO DOWN."

Pirojshaw Sarkari
CEO, Mahindra Logistics

PHOTOGRAPH BY RACHIT GOSWAMI

Right now, the next frontier appears to be convincing the government that logistics requires an "industry status". Sarkari and other executives in the industry have to deal with multiple ministries. Roads, air, and GST all have different bosses. A beginning, nevertheless, has now been made. "A few months back, a very senior IAS officer was appointed as Additional Secretary, Logistics, in the Ministry of Commerce. This is the icing on the cake. Now, we can sit with somebody to talk of organising the unorganised," Sarkari says.

One reason why India's logistics costs are high is its lack of standardisation. He cites an example to illustrate his point. In a warehouse, goods are stored and moved on a pallet. Their sizes are defined in the US and Europe. In India, however, there is no standardisation of pallet sizes. This impacts optimisation of space in a truck. Similarly, the industry requires standardisation in safety standards, in racks, and rack spaces among many other things. "Standardisation can only happen with government intervention. Once the industry is organised and there is standardisation, we can optimise and the cost of logistics will go down."

SUPPLY: IN SHORT

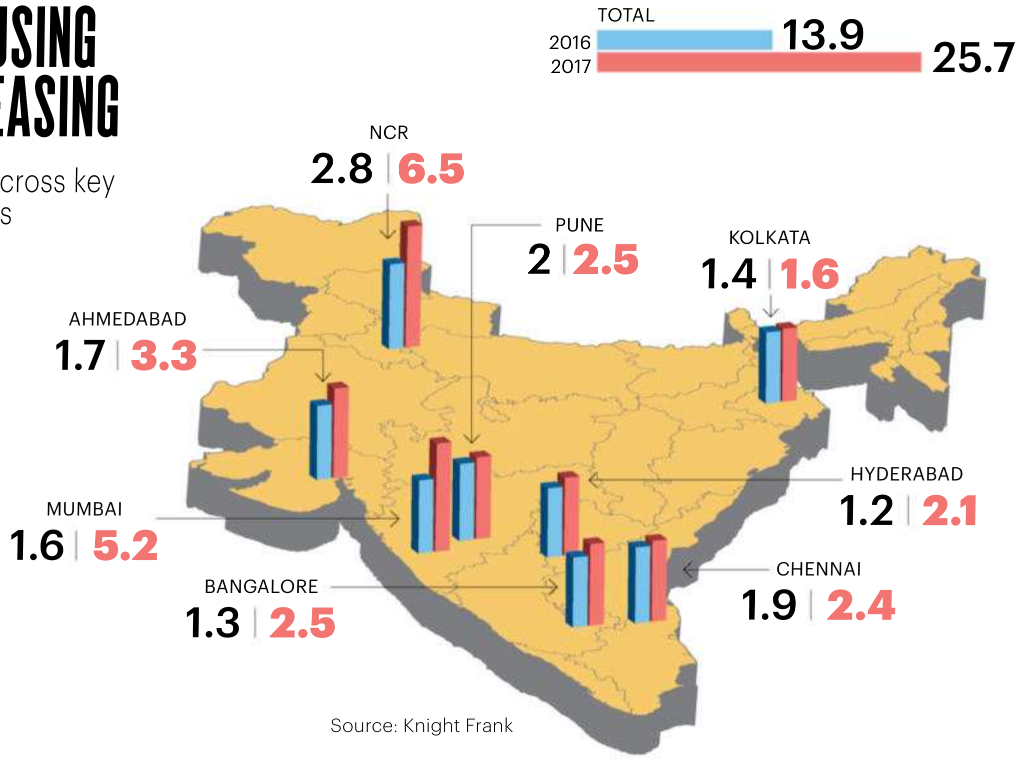
Near Vashere village, off National Highway 160 in Bhiwandi, road side dhabas, small houses, barren fields, and undulating roads lead to a sudden burst of construction. The thumping of steel breaks the silence of the fields as you near the warehouse of FM Logistic. The belt looks nearly the same as Tauru Road in Haryana. Small hills in the far; huge steel boxes nearby. Amazon, Delhivery, Gati, Stellar all have their warehouses here.

Parts of FM Logistic's 2.5 lakh sq ft. warehouse is still being built. Phase one is done but the office isn't ready yet.

WAREHOUSING SPACE LEASING

Surged 85% across key Indian markets in 2017

(in million square feet)



Source: Knight Frank

Workers have to use two portable toilets whose keys are kept with the security. The finished portion of the warehouse, nevertheless, is 75 per cent full with an FMCG, textile and television manufacturer taking up "pallet positions". Rental rates in this region were around ₹17-18 a sq ft a year ago. Now, new Grade A warehousing players command ₹22-23 a sq ft. Or even more.

Supply of modern warehouses, like that of FM Logistic's, fell far shorter than the demand as companies started consolidating smaller warehouses and rushed for the larger ones the moment GST was implemented. "Every additional warehouse increases your costs of logistics. These costs include the excess inventory you need to stock and the movement of cargo into multiple warehouses. So multiple warehouses led to inefficiencies," says Ananya Mittal, Chief Strategy Officer of Arshiya.

Hindustan Sanitaryware & Industries Limited (HSIL) makes everything from bathtubs to wash basins and showers. It is better known for its Hindware brand. In the pre-GST era, the company had over 40 warehouses across the country. Sandip Somany is Vice Chairman and Managing Director at HSIL Limited. He meets this writer at The Belvedere, a members-only club at The Oberoi, New Delhi. It is a hot mid-May morning. Somany is smartly suited. "Due to varying CST levy and state entry taxes across states, we were maintaining multiples warehouses, most of which were adding to operational inefficiencies as they were not being fully utilised. These warehouses were strategically located to minimise delivery cost for both the company and the consumers," he says.

After GST, the company started a process of consolidation and has thus far shut down about five of its warehouses and will close down another two this year. "Our plan is to have large warehouses in strategic cities like Bengaluru, Kolkata, Guwahati, etc. which will cater to not just the city but the region as a whole. Currently, we run our own warehouses but our strategy is undergoing a transformation. We will move to a third party logistics company this year," Somany says.

Alok Oke, Director Operations at L'Oréal India had noted in a media release that its distribution centre at Tauru Road in Haryana is part of its network consolidation, "designed specially to fulfill the requirements of L'Oréal's customers including distributors and modern trade in the National Capital Region (NCR), Western

PHOTOGRAPH BY REUBEN SINGH

Uttar Pradesh and some parts of Rajasthan."

Companies that didn't plan ahead are now paying a premium for warehousing space because of the shortage of supply. "The e-commerce companies were leading the pack in terms of consumption since 2015-2017. Everybody else was waiting and watching for GST to be implemented," says Jasmine Singh, Executive Director, Advisory and Transaction Services, Industrial and Logistics Services, CBRE. "Last year, we told many companies that if even 20 per cent of the India's warehousing customers tried and implemented an optimisation and consolidation plan in 2017/18, there is no supply to meet that demand. In the short to medium term, rentals will go high. Commit to space now for delivery in 2018. However, many did not heed our advice."

So, when GST was implemented, the fence sitters started booking space at a 15-20 per cent premium on what they would have otherwise paid. Singh speaks eloquently, and passionately. He wears a floral tie on a blue shirt. And a matching blue turban. Occasionally, he breaks into a phrase or two of Hindi. "Today, if a developer builds a plinth — a four feet high structure where you can dock your trucks — and places the order for the steel structure, the warehouse can be leased out. That's the shortage of supply in places such as Bhiwandi. It is not as bad in NCR. You do have some options. But because you have few options, you have to pay a premium," he says.

COMPANIES ARE PAYING A PREMIUM FOR WAREHOUSING SPACE. THE SUPPLY DEMAND SCENARIO IS LIKELY TO STABILISE IN 2019.

Meanwhile, the nature of lease is changing as well. Many multinationals are signing five year lock-ins and a 30 year lease on a warehousing building. Three years back, the standard lease term used to be nine years with a lock-in of two-three years, Singh says. "The lease itself states these companies have a long-term business plan for the country. However, it is a cultural issue. Multinationals don't want to be asset heavy. Otherwise, if you look at the quality of construction that they get done, if they were to build it themselves, they can recover the cost in 12-15 years time. For the kind of debt they can raise overseas, it makes sense," he adds.

Developers are smart. They have started leveraging long-term lease to raise money.

ROBOTS: COMING SOON

In a YouTube video of an Amazon Fulfilment Centre, with nearly three million views, orange warehousing

robots swarm around like bees. They look like a large-sized but a better version of a server. The robos can dock themselves underneath racks, lift them a bit, and move them around with speed. The racks rearrange themselves. A giant yellow robot, in another corner, picks up and places large packages.

Amazon is a known master at automation. It reportedly has over 100,000 robots installed in warehouses across the world. In India, it uses automation to measure operational efficiency and improve customer experience. Akhil Saxena, Vice President, India Customer Fulfillment at Amazon.in. says that whenever a new product enters its warehouses, it goes through a cubiscan process that helps record its dimensions, details such as the height, length, width, weight. "This insight is what enables a packing associate use the right box to pack the product. It also prompts him when there is a product that is fragile, and needs special packaging," he says.

In one of the company's fulfilment centres in Delhi, it has a 1.2 kilometre long conveyor belt with colour based automatic sorting. Automation such as this is possible in larger warehouses. With the newer crop of Grade A stock coming online, automation is only headed north.

Human resource service company Teamlease, in May, came up with a report that says the logistics sector can potentially create three million new jobs by 2022. It estimates that currently the sector employs 10.9 million. While most of the incremental jobs are expected to be created in the road freight sector at 1.89 million, warehousing could create 120,000 jobs, and packaging another 40,000. The courier services sector can employ 60,000 more over the next four years. The report, nevertheless, adds a caveat: "Technology is having a profound impact on the logistics sector making certain skills redundant, forcing the aggregation of some other skills and eliminating certain jobs at the lower end of the hierarchy" .

Chat up any executive from the sector, almost every conversation ends up about being "more efficient". Efficiency and employment are at loggerheads. Chandranath Dey is Senior Vice President and Head of Industrial Consulting at JLL India. He chalks up a few future scenarios. One of them is the Uberization of the trucking industry. "This is when companies pay for just one side of the transport costs. Earlier, people used to book a cab for the whole day and the vehicle would be idle for many hours. Ola and Uber knocked that off. The same is expected to happen in transportation. Many start-ups are working on this," he says.

Material handling equipment is now available on rent. Things such as this make the cost of automation cheaper. "Lot of optimisation will happen in labour because larger warehouses can use more automation. It would reduce manpower requirements significantly going forward," asserts Dey. "A one lakh sq ft warehouse now would have around 200-250 people. The number can vary depending on the type of goods being handled. Even partial automation can bring down manpower requirements by 20-25 per cent."

Amazon and Flipkart have made the delivery of goods predictable. Customers know exactly when it is dispatched and when it could be delivered through text messages. Even the B2B channel now expects a similar level of predictability, from pick to dispatch to delivery. Third party logistics companies, such as Mahindra Logistics, have therefore invested in warehouse management systems and transport management systems that provide visibility of goods shipped and its lifecycle, from FMCG companies to distributors. "The use of fleet management software (provides live tracking of goods), RFID systems for inventory identification and automated pallet storage is growing quickly, as is the number of start-ups aimed at bridging the technology gap," CBRE states in a report. "The Indian market for warehouse automation is projected to grow at a CAGR of 10-12 per cent to touch $3.49 billion by 2020. The widespread deployment of IoT would revolutionise operations by creating smart warehouses that improve supply chain efficiencies."

The initial "green shoots" of these initiatives are likely to appear in 2018. Their impact could be felt over the next couple of years. If that happens, it could make Make in India products more competitive. That is good news for the economy. BT

@Goutam20

WHAT´S DRIVING THE BOOM

Driving investor interest in storage is India's consumption story. People can afford more and they want more choice. If all of this is to be serviced properly, you need a lot of storage space.

The Centre's interest in pushing through reforms and policies around logistics has investors enamoured. Many policy changes, in quick succession, are the government's way of preparing the ground for Make in India

THE HUB

40

BANKING

COUNTING THEIR LOSSES

The bankruptcy proceedings would force Indian banks to book heavy losses. They are now focussed on minimising the damage

CORPORATE

64

STRESS RELIEVER

He has been buying stressed assets across the world for the last five years. Now NRI Sanjeev Gupta has turned to India. Who is this man and will he succeed?

CORPORATE

69

VEDANTA'S GREEN PROBLEMS

Tuticorin is just one of the many instances of alleged environmental law violation by the group

INTERVIEW

72

"GST has been good for the compliant textile players"

SANJAY LALBHAI

78

MANAGEMENT

MANAGERS CAN'T BE GREAT COACHES ALL BY THEMSELVES

The best ones are connectors.


RESERVE BANK OF INDIA
₹2000
9DF 945812

COUNTING THEIR LOSSES

The bankruptcy proceedings would force Indian banks to book heavy losses. They are now focussed on minimising the damage

By Anand Adhikari
Illustration by Nilanjan Das

THE NEWLY MINTED INSOLVENCY and Bankruptcy Code, 2016 (IBC) has put banks in a spot. The bankruptcy process is forcing them to book massive losses. Take a look. Promoters of Mumbai-based Shirdi Industries, a manufacturer of decorative laminates for the furniture industry, left just 26 cents for a dollar on the table for bankers as part of the IBC resolution. In the bankruptcy proceedings against Noida-based oil producing company JEKPL, bankers managed to negotiate just a cent higher than what Shirdi Industries offered them. Worse, in the case involving Hyderabad-based Synergies Dooray Automotive, bankers didn't even get the liquidation value. They accepted a paltry 6 cents for a dollar.

This is the state of affairs of most mid-sized companies under the bankruptcy code and bankers are taking huge haircuts on their loans. The situation is no better for the dozen large cases referred by the Reserve Bank of India (RBI) for bankruptcy in June last year. Kolkata-based Electrosteels Steel is the first company to emerge from the bankruptcy proceedings – here, the successful bidder Anil Agarwal's Vedanta has offered around 50 cents for a dollar to bankers. Barring the examples of steel giants Essar Steel and Bhushan Steel, where there is interest from strategic players or rival steel majors for consolidating their market share, the rest of the large bankrupt companies are not fetching good value. Interestingly, there are three large cases – Lanco Infratech, ABG Shipyard and Alok Industries – where bidders are offering close to the liquidation value, generally 10 per cent of the total value of the company.

60%

Of loans classified as NPAs by banks are good assets

Clearly, bankers are at the receiving end in the bankruptcy proceedings with conservative bidding by strategic and financial players. At last count, there were ₹14 lakh crore of stressed loans in the system – it includes ₹8 lakh crore of non-performing assets (NPAs). A seasoned executive of a public sector bank (PSB) gives an inside view of the "realisable value" of the bad loans in the system. He says that almost 60 per cent of the loans classified as NPAs by banks – ₹4.8 lakh crore – are good assets. Of these NPAs, banks will manage to realise a little over 50 per cent of the loan value. "The losses for banks will be around ₹2.40 lakh crore in these good assets," he says. The quality of 30 per cent of the bad loans, with a value of about ₹2.40 lakh crore, is not so good, according to the executive. It would be difficult for strategic or financial players to put more money into these assets and banks are likely to recover only 30-35 cent for a dollar, i.e. ₹72,000 crore. The remaining 10 per cent of the bad loans, adding up to ₹80,000 crore, have little value and these assets are a fit case for liquidation. "So ₹80,000 crore will be the loss for banks," he says. The losses for banks, then, comes to around ₹4.8 lakh crore.

Business Today made another estimate of the "IBC loss" by talking to consultants and insolvency professionals based on the cases referred to the bankruptcy code since its in-

TAKING A HIT

Banks are staring at losses of over ₹4 lakh crore under the IBC

Date	NPA ACCOUNTS	Loan Outstanding (₹cr)	HAIRCUTS %	Total losses (₹cr)
June-July 2017	12 BIG-TICKET LOAN DEFAULTERS	2,25,000-2,50,000	50%	1,12,500
From Jan 2017 till today	645 OTHER DEFAULTERS ADMITTED UNDER BANKRUPTCY	1,50,00 -1,75,000	70%	1,05,000
Jan-Feb 2018	28 LARGE TO MEDIUM LOAN DEFAULTERS	1,50,000-1,75,000	60%	90,000
Under consideration	DEFAULTERS WITH LOAN EXPOSURE OF OVER ₹2,000 CRORE	2,00,000	70%	1,40,000

Loan outstanding and haircut percentages are estimates; Haircuts over the principal amount; Existing 645 cases include loan sale to ARCs and exclude 12 plus 28 cases; Note: Some numbers may change; Source : Market

ception. The losses work out to ₹4.4 lakh crore. The provisions and contingencies of PSBs, according to the Indian Banks' Association, had been rising even before the code came into effect in December 2016, indicating the gravity of the problem – they have jumped from ₹1 lakh crore in 2014/15 to ₹1.53 lakh crore in 2015/16 and ₹1.70 lakh crore in 2016/17. In the same period, the profitability of banks has gone down drastically – from a combined profit of ₹37,540 crore in 2014/15, PSBs slipped into losses of ₹12,992 crore in 2015/16 and ₹11,388 crore in 2016/17.

Unprepared Banks

The bankruptcy code is mostly used by operational creditors to put pressure on promoters of stressed companies for extracting their dues. But bankers were a bit reluctant to actually take defaulters to bankruptcy, worried about getting a lower realisation or company liquidation. It was only in June last year that the RBI began forcing banks to invoke bankruptcy proceedings against defaulters. Its latest diktat says the resolution process would get triggered within 180 days in cases where there is a default even for a day. Ashesh Shah, Managing Director, Trans Continental Capital Advisors, says the banks are totally unprepared to handle a bankruptcy situation. "They lack necessary skills and expertise to make the most of it," believes Shah. In the current challenging economic environment, time-bound bankruptcy proceedings of 180 to 270 days have increased the risk of liquidation of stressed companies. Out of the dozen large cases, Alok Industries (debt of ₹22,000 crore plus), Lanco Infratech (₹43,000 crore) and ABG Shipyard (₹8,700 crore) are on the verge of getting liquidated. In less than two years of the bankruptcy code, there are already over 40 companies awaiting liquidation – it means a loss of assets, production, employment and also loans going down the drain. "It's a loss to the economy," says a consultant. Many suggest banks, especially PSBs, are getting pushed to a corner in the haste to clean up the banking system (See *The IBC Experience*).

With operational creditors invoking the code very aggressively, bankers have no option but to sit together and devise a resolution plan. Such a situation also creates panic among bankers and they start cutting fresh credit exposure to the company, especially working capital. Also, bids coming from strategic and financial players are far lower than their expectations or the principal amount of the loan. Currently, banks are getting close to or slightly more than the book value (principal minus the 50 per cent provisioning). "The prices in the large cases are driven by franchise value to gain market share. The value would moderate in the balance cases," says Abizer Diwanji, Partner and National Leader (Financial Services) at consulting firm EY India. A PSB banker aptly sums up the bankruptcy experience. "IBC is not a value maximiser for us," he says. "It gives me a safe exit. The options outside IBC are open to questioning tomorrow."

"IBC process won't result in good value unless banks approach it with a proper strategy"

ASHESH SHAH,
MD, Trans-Continental Capital Advisors

PHOTOGRAPHS BY RACHIT GOSWAMI

Meanwhile, participation from global players is almost absent in the IBC proceedings so far. One of the reasons is frequent amendments to the code and challenges by defaulting promoters. "Let the code stabilise first. We don't want to get stuck in litigation before or after taking over the assets," says a global fund manager.

The Last Resort

Plenty of work is required by banks even before a company becomes a fit case for bankruptcy. Rajkiran Rai G., MD & CEO, Union Bank of India, says that banks need to evolve a mechanism to deal with stress. Amit Kumar, Partner and Managing Director, BCG, says there is a need for continuous monitoring of vulnerable accounts and pre-planning restructuring options, giving due consideration to the size, industry, indebtedness and business model of borrowers.

Abizer Diwanji says that most banks are worried about conserving cash. "Unless the banks actually try and turnaround the operation

The IBC Experience

Banks are getting pushed to a corner

Lower bids, averaging half a cent to a dollar

Absence of defaulting promoters results in lower realisation

Lack of interest from strategic players except in a handful of cases

"The recovery rate under IBC is going to be higher than 25%. Banks will recover money faster"

RASHESH SHAH,
Chairman & CEO,
Edelweiss Group

and create some enterprise value, these businesses will not attract anybody," feels Diwanji.

"We all are working towards it," says Rai, adding that banks have been working with corporates as a partner for decades. "There is too much focus on the 15 per cent stressed cases. The fact is that the rest 85 per cent are good despite a difficult operating environment. We always work very closely with promoters in resolving their issues," says Rai.

With early identification of stress, there is a possibility of accepting one time settlement (OTS) of loans with promoters. Similarly, there is an option of selling loans to asset reconstruction companies (ARCs). Some of the ARCs have acquired scale in the last decade and there is now healthy competition among them to grab good assets. For example, Edelweiss has a separate team for the operational turnaround of stressed companies. There may be cases where banks can hire the services of turnaround agents to effect an operational turnaround.

Shah of Trans Continental Capital believes that many businesses can be sensibly restructured rather than sending them to IBC. "IBC process won't result in good value unless banks approach it with a proper strategy," believes Shah.

Similarly, banks can also insist that promoters hive off some non core business or a part of the business to make the whole entity viable. Expert suggest that the IBC should be the last resort to restructure or recover the money. Shah says that the banks can achieve a better outcome by arming themselves with necessary information such as details of outstanding dues, collateral, legal agreements, stock of assets, etc. "This will give the insolvency professional a headstart and save valuable time. They can also work towards identifying potential buyers for the assets," says Shah. In the US and UK, banks prepare a pre-packaged plan where the deal is struck much in advance for the sale of business. The actual sale is executed on the commencement of the bankruptcy proceedings. It could help banks manage stressed cases in India as well – once a case lands up at IBC, the bankers have little control over the process.

"The erstwhile joint lenders forum (JLF) of banks needs

Global and domestic funds are extremely selective

RBI pushing banks to take defaulters to IBC. It should ideally be the last resort

High liquidation probability in SME and sectors not doing well

Higher provisioning requirement: 40% for secured assets and 100% for unsecured assets

Game Plan for Banks

How banks can minimise their losses under IBC

Prepare a contingency IBC strategy for stressed assets

Appoint turnaround experts to study the defaulting companies

Also check with investment bankers globally for interest in the assets

Watch big operational creditor(s) carefully who could trigger bankruptcy

Insist on one time settlement with promoter rather than drag him to bankruptcy

Sell loans to Asset Reconstruction Companies

Create a distressed assets division for building expertise. Treat it as a profit centre

Put together an exit strategy for equity holdings in distressed companies

to transform into the committee of creditors (CoC) under IBC. That is not happening in terms of the mindset. The whole approach of bankers in CoC has to change," suggests Diwanji.

Amit Kumar of BCG says that banks need to allocate substantial skilled resources to achieve recovery in a short time. "Banks may need assistance of external advisors to bolster internal resources and to fully utilise the IBC process," advises Kumar.

Many analysts feel that banks could aggressively take equity in businesses and use the operational turnaround agent to create more value in the business. The ARCs are experimenting with this model in India. "Banks have traditionally utilised equity instruments only to improve negotiating leverage with the promoters rather than long-term value creation tool," says Shah of Trans Continental Capital. Indeed, at some stage in future, the banks will treat their stressed assets division as a separate profit centre.

The Upside

The new modern bankruptcy code aims to solve the banks' NPA problems faster than the earlier, defunct laws. Studies in India reveal that banks used to recover, on average, 25 cents to a dollar over a four-year period. Rashesh Shah, Chairman & CEO, Edelweiss Group, says that the recovery rate under IBC is going to be higher than 25 per cent. "Banks will also recover money faster," says Shah. The recovery rate will also improve gradually as the code evolves.

Globally, laws similar to the IBC have proved to be extremely effective in resolving stress. For example, recovery rate in the US is as high as 80 per cent. Banks get their money back in a year's time. In neighbouring China, the recovery rate is 40 per cent spread over a period of two years. The Indian bankruptcy code is also acting as a deterrent. Today, promoters are really scared of losing their business – Ruias of Essar Steel, Singal brothers of Bhushan Steel and Gaurs of the Jaypee Group are among those in the firing line. Many promoters are coming to the negotiating table. The bankers, who for long were scared of coming under scrutiny by taking substantial haircuts, are accepting whatever they are getting in terms of the pricing. The stringent provisioning requirement for NPAs and consequent lower profitability or losses is also cleaning up the years of bad assets in banks' books. "They actually have a good opportunity to make a fresh start. The legacy assets or exposure is getting cleaned up in the IBC process," says a consultant.

The government can do its bit by relaxing the bidders eligibility criterion to include existing promoters if they are not wilful defaulters – their absence is resulting in lower realisation for banks. For example, in the US the debtor retains the management control of the company and also has right to propose a restructuring plan. In India, Section 29A of the IBC disqualifies defaulting promoters from submitting a resolution plan. "If Section 29A of the code goes away, the recovery will be better," says Abizer Diwanji of EY India. Rai of Union Bank of India suggests promoters should be allowed after proper scrutiny, forensic audit and other checks and balances. "Value maximisation will happen if there is fair competition," he says.

The code has also been criticised for declaring a liquidation value, which is actually becoming a benchmark for bidders to put a price on the asset. The bankers are lobbying hard for not making the liquidation value public. "The correct way forward is the enterprise value," says Rai. Enterprise value refers to total value of the business instead of its market capitalisation or equity value. If banks can push the government and the RBI for an enterprise value, there are some chances of getting a good value for the bad assets. And that will surely make the IBC a win-win for all. BT

@anandadhikari

बी एच ई एल

BHEL

Committed to the Vision of a New India

Extract of the Standalone & Consolidated Audited Financial Results for and up to the Quarter ended March 31, 2018

₹ in Crore

Sl. No.	Particulars	3 Months Ended 31.03.2018 Standalone (Audited) (note 6)	Corresponding 3 Months Ended in the previous year 31.03.2017 Standalone (Audited) (note 6)	12 Months Ended 31.03.2018 Standalone (Audited)	Corresponding 12 Months Ended in the previous year 31.03.2017 Standalone (Audited)	12 Months Ended 31.03.2018 Consolidated (Audited)	Corresponding 12 Months Ended in the previous year 31.03.2017 Consolidated (Audited)
1.	Income from Operations						
a.	Sales/Income from Operations	9832.82	9479.04	27850.44	27740.05	27864.84	27769.83
	Add: Excise Duty included in Turnover	(4.22)	395.30	247.98	1100.37	247.98	1102.06
	Sales/Income from Operations	9828.60	9874.34	28098.42	28840.42	28112.82	28871.89
b.	Other Operating Income	315.06	374.52	962.56	859.40	962.64	859.61
	Total Revenue from Operations	10143.66	10248.86	29060.98	29699.82	29075.46	29731.50
2.	Net Profit / (Loss) for the period (before Tax, Exceptional items)	1139.87	268.59	1584.99	627.83	1214.87	585.57
3.	Net Profit / (Loss) for the period before tax (after Exceptional items)	1139.87	268.59	1584.99	627.83	1214.87	585.57
4.	Net Profit / (Loss) for the period after tax (after Exceptional items)	457.17	215.55	806.60	495.86	438.19	455.18
5.	Total Comprehensive Income for the period [Comprising Profit / (Loss) for the period (after tax) and Other Comprehensive Income (after tax)]	532.47	222.38	889.93	466.86	521.67	426.49
6.	Paid-up equity share capital (Face Value ₹ 2 per share)	734.28	489.52	734.28	489.52	734.28	489.52
7.	Other Equity	-	-	31866.80	31804.92	31600.71	31899.47
8.	Basic & Diluted Earnings Per Share (on enhanced equity post allotment of bonus shares on 03.10.17)	1.25	0.59	2.20	1.35	1.19	1.24

#Subject to audit u/s 143 (6) of the Companies Act 2013 by the C&AG of India.

Notes:

1 The above is an extract of the detailed format of Quarterly Financial Results filed with the Stock Exchanges under Regulation 33 of the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015. The full format of the Quarterly Financial Results are available under "Corporate Section" of the Stock Exchange websites of BSE and NSE at **www.bseindia.com** and **www.nseindia.com** and under "Financial Information" section of the company's website **www.bhel.com**

2 The company has prepared these consolidated and standalone financial statements in accordance with the companies (Indian Accounting Standards) Rules, 2015, (Ind AS) prescribed under section 133 of the Companies Act, 2013.

3 In addition to Interim dividend of Rs 0.80 per share already paid, the Board of Directors has recommended a final dividend of Rs 1.02 per share (Face Value Rs. 2 per share).

4 On comparable basis, turnover (excl. excise duty) for the year 2017-18 should be higher by Rs. 488 crore totaling to Rs. 28,338.44 crore considering the fact that under pre GST regime ED, CST & service tax were forming part of bought out items (BOI) & civil turnover. Accordingly, for meaningful comparison the amount not considered, amounting to Rs. 488 crore on account of such taxes, due to Ind AS requirement, has to be included in the turnover for the year 2017-18 (Rs. 400 crore forming part of the turnover for 2016-17) for correct representation and comparison.

5 The company has an outstanding order book position of Rs 1,18,136 Crore. as at the end of 2017-18.

6 Figures of last quarter are the balancing figures between audited figures in respect of the full financial year and the published year to date figures upto the third quarter of the current financial year

For and on behalf of Bharat Heavy Electricals Limited
Sd/-
(Atul Sobti)
Chairman & Managing Director

Place : New Delhi
Dated : 29.05.2018

Bharat Heavy Electricals Limited

CIN: L74899DL1964GOI004281
Registered Office: BHEL House, Siri Fort, New Delhi - 110049
Phone: 011 66337000 | **Fax:** 011 26493021
E-mail: shareholderquery@bhel.in | **Website:** www.bhel.com

Powering Progress... Brightening Lives   Touching Every Indian Home

TESTING TIMES

DELHI HC DENYING MONSANTO'S PATENT RIGHT OVER A GM COTTON SEED HAS TRIGGERED A DEBATE ON THE PATH AHEAD FOR INNOVATION-LED SEED COMPANIES.

By JOE C. MATHEW

The fight for IP-friendly policies could decide the future of technology transfer in the agri-biotech space

ON MAY 22, the Competition Commission of India (CCI) approved the $66 billion mega-merger of German chemical and pharma major Bayer AG and the US seed giant Monsanto. As the merged entity will have intellectual property rights (IPR)-linked control, including patent protection, over more than 90 per cent of the genetically modified (GM) traits across crops that are licensed and marketed globally, the CCI approval came with some riders. One of these stipulations is known to be that Bayer, which is acquiring Monsanto, will have to grant non-exclusive, royalty-bearing licences to its digital farming products and platforms commercialised in India to avoid monopoly.

Complying with the CCI mandate could be the least of Bayer's worries at the moment. There are bigger challenges to overcome before the conglomerate and similar innovation-intensive companies could hope to enjoy unbridled IPR protection in India. To start with, a Delhi High Court division bench has ruled that Monsanto is not entitled to a patent over the Bollgard-II Bt cotton seed, a GM variant that resists the bollworm pest. According to the ruling, these varieties are not protected under India's Patents Act, 1970, but Monsanto can avail a different kind of IPR protection, a registration under a separate law called the Protection of Plant Variety and Farmers' Rights (PPVFR) Act. Under PPVFR, the company will receive a trait fee fixed by the PPVFR Authority, but it can no longer negotiate licensing agreements with local firms – a given ever since the multinational has introduced the GM trait (Bt cotton) in India. It is the only GM crop allowed in the country since 2003 (an upgraded variety came in 2006).

A disappointed Monsanto has appealed to the Supreme Court. The apex court's hearing, scheduled to begin on July 18, is keenly awaited by the seed and agri-biotech industry as the outcome could make or break several existing and future relationships among biotechnology researchers, technology providers and seed producers that are eyeing at a bigger role in the fast-growing $3.6 billion Indian seed market.

On the face of it, the ongoing legal battle is a case of business gone sour between Monsanto and Nuziveedu Seeds Ltd (NSL), a homegrown company which argues that

THE TWO SIDES

While there is fear that the ruling will hit innovation, the Indian players say the court has gone by the law and ensured fair play

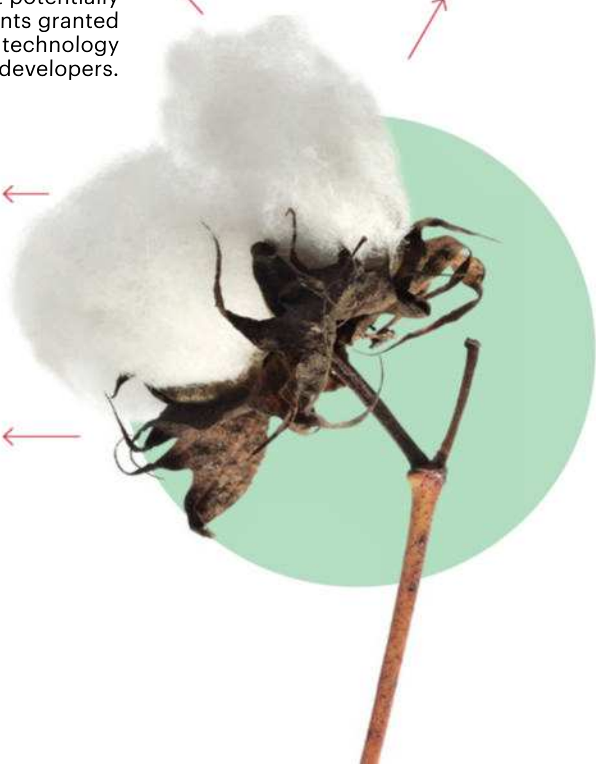
THE MNC VIEW

The judgement affects not only Monsanto's patent but potentially all gene patents granted to other technology developers.

Herbicide- tolerant and drought-tolerant varieties (all of which are biotech innovations) benefit farmers.

A total of 100-plus patents in agri-biotech and 1,291 patent applications could be impacted.

Research in multiple crops like cotton, maize, rice and vegetables such as brinjal, cauliflower and cabbage may come to a halt.



THE INDIAN VIEW

The court order only reinforces what is stated in the Indian Patents Act, which excludes from patentability plants and animals in whole or any part thereof (other than microorganisms), seeds and essentially biological processes for production or propagation of plants and animals.

The specific clause of the Patents Act has been used extensively in the past, including for invalidating most of the patent claims that Monsanto had on its GM cotton.

Transgenic varieties get intellectual property protection only under the PPVFR Act. Section 30 of the Act provides for researcher's rights under which a protected variety can be used for developing new varieties. The new variety developed by a researcher can be registered under Section 15 of the PPVFR Act for IPR and commercial exploitation.

India's Patents Act does not allow Monsanto any patent cover for its GM cotton seeds. Monsanto sold 50 seeds of a Bt cotton transgenic variety (donor seeds) for ₹50 lakh to NSL and its subsidiaries under licensing agreements signed in 2004. The donor seeds were used by the Indian firms to integrate the Bt cotton trait in their proprietary seed varieties. As long as Nuziveedu paid the trait fee to Monsanto for every seed variety it sold, the deal was on. But the moment the Indian buyers stopped paying but continued to sell genetically modified hybrid cotton seeds despite the termination of the sub-licence agreements with Monsanto, the dispute got dragged to the court.

A single-judge Bench of the Delhi HC, which initially heard the case, invalidated Monsanto's decision to terminate the sub-licence. On April 11, a two-member Bench said that the transgenic plants with the integrated Bt trait, produced by hybridisation, are excluded from patentability, and Monsanto cannot assert patent rights over the gene thus integrated with the generations of transgenic plants. Instead, it has allowed Monsanto to approach the PPVFR Authority for registration of its varieties.

A Fluid Situation

Not all are in agreement with the Delhi HC verdict. Industry veteran M. Ramasamy, Chairman of Rasi Seeds and President of the Federation of Seed Industry of India (FSII), an industry body formed by the local units of foreign companies, does not think a technology should lose its patent protection if it is integrated with a plant. "Bt gene is developed manually and it is a synthetic process. Section 3(j) of the Indian Patents Act does exempt seeds and plants from patentability, but it cannot (be a reason to) invalidate the technology," he says.

Monsanto also claims that the patent is for a biotech invention containing the infusion of Bt gene into the cotton genome. Although the patent act does not cover plants, it does cover components that can be termed microbiological processes and microorganisms, and thus are patentable under the Act.

Ramasamy fears that technology owners, mostly foreign multinationals like Monsanto, will not collaborate with Indian companies if they are not assured of patent protection. "It will definitely harm our interest. Technology collaboration, technology transfer or technology licensing are all the same. If there is no patent protection in the country, they will not share their technology. Multinational corporations can move out of India as they are working in several countries. Also, a handful of companies like Rasi are now investing in biotech R&D. If you cannot ensure patent protection, why would you invest in R&D for 10-15 years to get a result?"

Paresh Verma, President of Alliance for Agri Innovation and Bioseed South East Asia, concurs. "The recent ruling of the Delhi HC is a serious setback to all R&D efforts not only in the space of agri-biotech but the entire recombinant DNA technology. Development of such cutting-edge technology requires sustained investments over several years. In a situation where such inventions cannot be protected, it is bound to adversely impact further investments and technology development by both Indian and foreign companies."

Unwarranted Panic?

While a section of the homegrown companies shares the concerns of global majors, many consider the 'panic' to be unwarranted. The National Seed Association of India (NSAI), the country's largest seed association which has NSL among its members, supports the HC verdict, saying that the

"THE DELHI HC RULING IS A SERIOUS SETBACK TO ALL R&D EFFORTS"

Paresh Verma
President of Alliance for Agri Innovation and Bioseed South East Asia

"THERE WILL BE MORE COMPETITION AND FAIR PLAY IN THE MARKET"

Kalyan B. Goswami
Director General, National Seed Association of India

court had only followed the law of the land.

"India has a well-balanced legal framework that protects the rights of plant breeders, farmers and biotech companies. The Patents Act permits biotech firms to patent artificially engineered genes as well as the transformation process for creating transgenic seeds in a laboratory. In the case of Bt cotton, Monsanto did precisely that when it sold transgenic seeds to Indian seed companies to be used as initial varieties for creating new ones. But once the transgenic seed is sold by a biotech research company, it cannot claim patent rights over subsequent seeds produced by farmers and breeders who are essentially using biological processes. For that, it must rely on the provisions of benefit-sharing under the PPVFR Act," says Kalyan B. Goswami, Director General of NSAI.

He considers the verdict a landmark judgement. "It will provide all breeders of small, medium or large companies, including the public sector, universal access to development of new plant varieties with transgenic traits, subject to its biosafety approval. Farmers will have access to more varieties from a wide range of seed companies. There will be more competition and fair play in the market. Innovation in trait development will also be encouraged through benefit-sharing provisions in proportion to the agronomic value a trait confers to new varieties. If a trait loses its agronomic value, the trait value should also disappear, and it will be fair for farmers."

Swadeshi Jagran Manch (SJM), an RSS affiliate with pro-nationalistic viewpoints on policies, has also welcomed the court's decision. Ashwani Mahajan, national Co-convener of SJM, termed it "a victory for Indian Constitution and farmers' rights" and hoped it would become a warning to all MNCs so that they would not resort to such "dubious methods to cheat Indian farmers in the future".

NSAI, too, in its response to CCI's call for public comments on the Bayer-Monsanto merger, cautioned against the possibility of monopolistic practices in the wake of such deals. It urged the CCI to ensure that large IPR-owning companies adhere to the Indian IP laws so that monopolies in the downstream seed market would not occur.

"It is essential for the CCI to stipulate that post-merger, large entities such as Monsanto and Bayer will strictly follow the Indian IP law wherein access to the GM traits will be provided to the breeders as rights and the developer of the GM traits will collect the trait value as per the provisions under Section 26 of the PPVFR Act under which it can make a claim. The PPVFR Authority can determine the trait value in the form of benefit share from the seed sale of all varieties which contain the trait," the NSAI representation said. By giving a conditional approval, the CCI seems to have addressed some of these concerns.

THE SC VERDICT **WILL BE MORE CRITICAL** IN THE WAKE OF AGRI-TECH M&As HAPPENING GLOBALLY

Indian Council of Agricultural Research (ICAR), a public research institution credited for developing high-yield varieties of paddy, wheat and sugar cane for Indian farmers, prefers a wait-and-watch approach. "The Delhi HC has interpreted the patent law in a specific manner. The Supreme Court is looking at it. If the patent invalidation is legally correct, the Supreme Court will also uphold it. Otherwise, it will disagree. Whatever be that decision, it will become jurisprudence. That is when we need to study its impact on India's seed development capability," a senior ICAR official says, requesting anonymity. According to him, when the SC order comes, and if Indian scientists feel it will kill innovation, one can always think of tweaking the law. "We can always put up the case with the government. Law is not static. It will adapt; it will evolve. And IPR laws are evolving," he adds.

The SC verdict will be more critical in the wake of similar mergers and acquisitions happening globally in the seed and agri-biotech space. Just like Bayer-Monsanto, ChemChina has recently taken over Swiss pesticides and seeds group Syngenta for $43 billion while the $130 billion DuPont-Dow Chemical merger was completed last year. Between them, these three mammoth entities own nearly 100 per cent of the IPRs on GM traits and wield immense market power based on the synergies gained through IPRs, distribution networks and R&D, especially for future projects focussing on traits, pesticides, herbicides, biologics, Big Data and digital agriculture.

At this point, it is difficult to predict the future course of agri-biotech and seed industry in India. But the rumbles of a big change could be clearly heard. The Monsanto controversy simply marks the beginning. **BT**

@joecmathew

A LOSING BATTLE

The scale of value destruction in the telecom sector has been huge. Only sensible policies and practices can save it now.

By MANU KAUSHIK

Illustration by Raj Verma

IS IT WORTHWHILE INVESTING in the Indian telecom sector? Japan's NTT DoCoMo would reply in the negative. In 2009, DoCoMo acquired a 26.5 per cent stake in Tata Teleservices (TTSL) for $2.7 billion. The agreement stated that if TTSL failed to achieve certain milestones in five years, the Tatas would find a buyer for the shares held by DoCoMo or buy that stake at a 50 per cent discount. Last October, DoCoMo took a hit when the Tatas paid it about $1.27 billion, 47 per cent of the deal amount, and that too after a three-year fight with Indian regulators. At the same time, the share price had fallen much below the agreed value. The actual erosion was, in fact, much higher.

In 2008, Norwegian operator Telenor joined hands with realty firm Unitech, which had acquired nationwide spectrum in 2008. The venture started with huge losses but Telenor was hopeful of making money in the long term. It bought a majority stake (67.25 per cent) from Unitech for $1.3 billion and also invested in the 2G network. It lost all its licences when the Supreme Court revoked 122 licences in 2012 in the 2G scam case. It returned after acquiring six licences in the November 2012 auction. However, after Reliance Jio started offering free voice calls, it lost out. After spending billions, it exited India, selling the venture to Airtel.

Telecom, a sunrise sector till not too long ago, has become a graveyard for service providers, both domestic and international. A highly competitive industry with over a dozen operators till a few years ago is now down to three large private operators

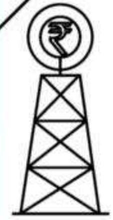

GAME OVER...

A SORRY SAGA

Around two years ago, the telecom sector had 11 players vying for revenues and customer market share. That number is likely to go down to five this year. Here's the status of the small- and medium-size operators that have exited the market

AIRCEL

₹50,000 cr
is the mountain of debt on the books of Aircel after the operator suffered losses. In February, Aircel, owned by Malaysia's Maxis, filed for bankruptcy in the NCLT. The insolvency professional and lenders of Aircel are looking at ways to revive its services in some circles and raise capital



RCOM

₹18,000 cr
is what RCom is expected to get when Reliance Jio acquires its spectrum, towers, fibre and switching nodes. While the initial attempt to sell its consumer business to Reliance Jio has hit a brick wall, the company has managed to convince the NCLT that it will clear the dues with operational creditor Ericsson once its tower deal is through

TATA TELE SERVICES

After settling its three-year-old dispute with Japan's NTT DoCoMo for $1.2 billion, Tata Teleservices sold its consumer mobile segment to Bharti Airtel for nearly free, marking the exit of the Tata Group from the consumer-facing telecom business

– Bharti Airtel, the Vodafone-Idea combine and Reliance Jio – apart from state-owned Bharat Sanchar Nigam.

The sheer scale of value destruction that has accompanied this is mind-blowing. Over the past few years, over ₹1 lakh crore investment has gone down the tube, while more than one lakh people are reported to have lost their jobs. The sector's gross revenue fell 8.56 per cent to ₹2.55 lakh crore between 2016 and 2017, according to sector regulator Telecom Regulatory Authority of India (TRAI). Adjusted gross revenue fell 18.87 per cent, licence fee earnings 18.78 per cent and spectrum usage charges 32.81 per cent during the period.

Telecom was not a hellhole that it is now till not too long ago. Till 2008, entry barriers were low, spectrum was cheaper, scale wasn't that important and government favoured competition. That led to not just large domestic companies like the Tatas, Aditya Birla Group, Reliance Industries, but also smaller players such as Videocon, Unitech and DB Group with interests in unrelated industries taking a plunge. Even when the Supreme Court cancelled 122 licences in 2012, many decided to slug it out.

But things changed dramatically with Reliance Jio launching 4G services in September 2016. It started by offering free services for six months. Later, while offering voice for free, it came up with low-priced data plans. With voice – close to 70 per cent revenues of telecom players becoming free – the pressure on incumbents started building up. Their future now depended on offering high-speed data at low

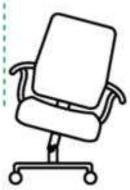
VIDEOCON TELECOM

₹4,428 cr

is what it received in 2016 from Bharti Airtel when it exited the telecom business with sale of spectrum. It subsequently shut down operations in the Punjab circle in 2017, where it was operating through a separate entity – Quadrant Televentures

MTS INDIA

MTS exited the telecom sector last year through its deal with RCom. There are reports that RCom still owes some $300 million to MTS from the deal



TELENOR INDIA

1,200

Telenor employees are expected to lose their jobs after the merger with Bharti Airtel. Telenor might be one of the luckiest medium-sized operators, finding an easy exit route. The DoT gave the go-ahead to the Airtel-Telenor merger – a no-cash, debt-free deal where Airtel will take over spectrum payment liabilities and tower lease obligations

rates. Considering that the incumbents already had a debt of over ₹2.5 lakh crore, they found it difficult to compete against an entity loaded with cash.

This started the exit by smaller operators and led to the merger of Vodafone and Idea Cellular, which were till then the biggest after market leader Bharti Airtel. Smaller telcos that couldn't compete with Jio shut shop before it was too late. Telenor and Tata Teleservices sold their businesses to Airtel.

It was not just the magnitude of Jio's spending – estimated at $31 billion – but also the longevity of its attack that made the life of small telcos miserable. After all, the total Jio investment is more than the combined investment of half a dozen small operators. The disruption has also hurt bigger players such as Airtel. The only difference is that they have the ability to bear losses for an extended period. Also, exiting a business is not easy in India.

Wealth Erosion

Last year, Anil Ambani made a public appearance in the middle of a crisis at RCom and made a clarion call for the sector. He said the sector is in an ICCU (intensive coronary care unit). While citing the example of the "mighty" Tatas which, Ambani said, had to "gift away" their telecom business to Airtel, he said several operators had seen value erosion and large losses over the year. He was pointing at frenetic M&A activity in the sector reducing the number of private players to just three. But this was not the only reason. Starting 2010, the government went on a spectrum sale overdrive to meet revenue targets. In has held auctions in six out of the last eight years, garnering ₹3.55 lakh crore. Smaller telcos, including Reliance Communications, Tata Teleservices, MTS, Telenor, Videocon and Aircel, spent ₹54,679 crore in these auctions. Experts estimate that they spent an equal amount on building their networks. After a cumulative investment of around ₹1.1 lakh crore, these companies have been sold for about ₹30,928 crore (excluding Aircel, which has filed for bankruptcy). Though this includes deferred spectrum payments to the government (which will be paid by the new buyers), experts estimate wealth erosion of ₹50,000-60,000 crore for smaller telcos alone.

The bigger incumbents – Airtel, Vodafone and Idea Cellular – have also suffered. "The prices have gone down so much that it has impacted revenues. The bigger guys benefitted on account of smaller players who sold their businesses at a loss," says Tanu Sharma, Associate Director (Corporates), India Ratings & Research.

In a November 2017 note, India Ratings noted that "the wherewithal to survive has been diminishing for smaller telcos ever since Jio entered the telecom landscape. The exit of smaller telcos is good for the industry structure in the long term but painful for the stakeholders, including lenders."

The amount of stressed assets and non-performing assets (NPAs) in telecom is staggeringly high. Minister of State for Finance Shiv Pratap Shukla told Lok Sabha in March that telecom gross NPAs stood at ₹11,028 crore. A few days prior to that, former Union Finance Minister P. Chidambaram had said that telecom and power contributed to the NPA problem more than anything else due to the 'malicious twist' given to the UPA government's policies governing these sectors.

Sanjeev Krishan, Partner and Leader Deals, PwC India, says the NPAs could be far higher than what has been reported, and a clearer picture will emerge over the next two quarters. "The stress has been evident for a quite few years, both with the telcos and infrastructure owners, and particularly after the cancellation of 2G licences. Some of the telecom businesses are part of larger conglomerates and have had backing from their promoter groups. The underlying economics of the business has changed and as a result, the level of sustainable debt for a number of these businesses is a fraction of the overall debt they are carrying," he says.

The crunch has also led to big job losses. Different agencies give different figures. Bangalore-based human resources consulting firm CIEL HR says 80,000-90,000 jobs were lost in 2017/18, substantially higher than the 40,000 layoffs in 2016/17.

"Seven years ago, telecom companies were at their peak in revenues. Since then, hike in spectrum prices, increased competition and adverse regulations have weighed down on the sector. We still haven't seen the end of the consolidation phase," says S.P. Kochhar, CEO of the Telecom Sector Skill Council, adding that 20-25 per cent of the workforce will be laid off during consolidation. "Manpower is being shed in areas like sales, maintenance, customer service, middle- and senior-level management."

Aditya Mishra, CEO, CIEL HR, says: "Sales jobs have been axed because acquisition of new customers has slowed down and companies are cutting down on manpower costs."

"We are seeing telcos shutting down non-critical functions but companies cannot continue to lay off people as they are growing in size," says Amresh Nandan, Research Director, Gartner.

TAKING A TUMBLE

₹1 lakh crore: Investment that has gone down the tube

80,000-90,000: Jobs that could be lost this year compared with 40,000 in 2017

18.87%: Fall in adjusted gross revenue of the sector in 2017/18

₹3.55 lakh crore: Amount raised by government from the sector in the past six spectrum auctions

₹50,000-60,000 crore: Value erosion for smaller telcos, including Reliance Communications, Tata Teleservices, MTS, Telenor and Videocon (excluding Aircel, which has filed for bankruptcy)

Falling Apart

Setting up a telecom business has never been as difficult as it is today. Jio is stifling competition on two fronts – scale and tariffs. But that wasn't always the case. Smaller telcos would buy 2G spectrum in a limited number of circles – typically where spectrum prices weren't as high as in the metros – and offer lower voice tariffs than the large telcos.

Aircel, for instance, had more subscribers than Airtel, Vodafone and BSNL in Chennai and Tamil Nadu in 2016. Telenor India was the third-largest player in the UP (West), Gujarat and UP (East) and surpassed Airtel and Idea in some circles. "Earlier, there was voice arbitrage. Everything is packaged into data now. The smaller players didn't have the capacity to offer high-speed data at low prices. They didn't have the ability to offer 4G services," says India Ratings & Research's Sharma.

Experts say the technologies were changing fast and smaller telcos didn't have the wherewithal to keep investing. MTS India and Tata Teleservices (TTSL), for instance, had CDMA networks. TTSL also had GSM network in some circles. The CDMA technology is good for voice but not for data and transition from CDMA to GSM comes at a huge cost. "CDMA operators were upgrading their data network by bringing in new technologies (MTS launched EV-DO Rev.B phase II) but the market shifted to LTE (4G), which resulted in loss of data customers to larger telcos," says Neil Shah, Research Director, Counterpoint.

The smaller operators couldn't match the prices offered by Jio. "Scandinavian companies keep a close watch on return on investment. Every business decision for them revolves around it," says a former Telenor executive. "Aircel was good operationally but ran out of cash to invest in the network. After Jio entered the market, it lost subscribers every quarter. Videocon Telecom never invested in customer service and infrastructure. Before the sale to Airtel, they were in a death spiral," says Counterpoint's Shah.

Exit Issues

Signing a deal is one thing but closing it is another matter, especially in India. Some fringe players might feel relieved after selling their businesses to larger telcos but finding an exit is far from reality for others. Aircel is struggling with mounting losses and high debt – estimated at around ₹50,000 crore. Malaysia's Maxis-owned Aircel knocked the doors of the NCLT in February to file for bankruptcy. The insolvency professional and lenders of Aircel are looking at ways to revive services in some circles and raise capital.

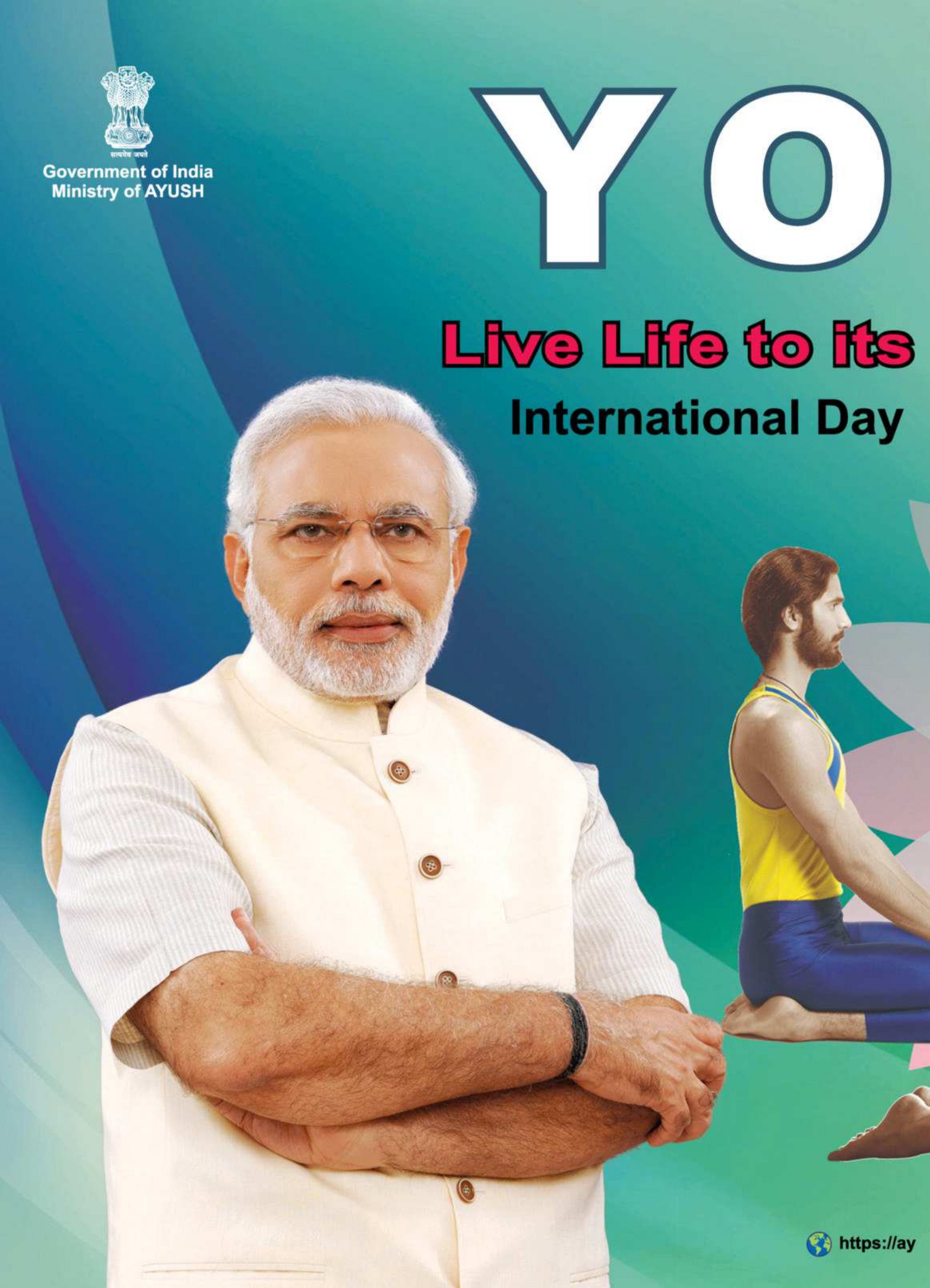
With so many failures in such a short span, and concentration of power in the hands of two to three operators, there's looming fear that the changing telecom landscape may put mobile phone consumers at a disadvantage and dissuade new players from taking a plunge. "It's proven that telecom is a business of scale and only strong hands can compete. You need to have pan-India presence," says Bhupendra Tiwary, Research Analyst, ICICI Securities.

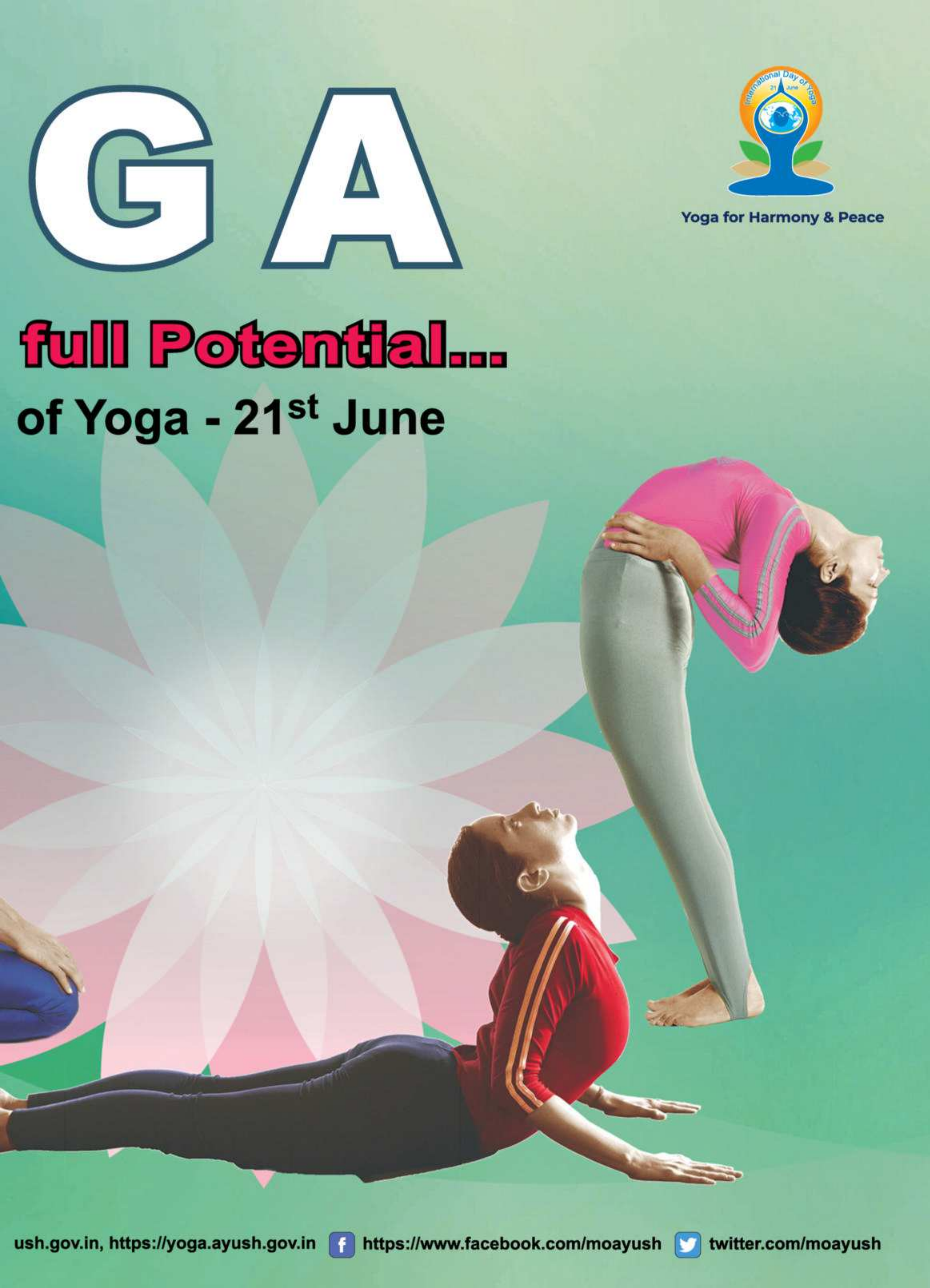
S.K. Gupta, Secretary, TRAI, says that from the investment point of view, the sector is red-hot. "Data growth in India is one of the highest in the world. It's a good place for anybody to come." Also, with India not being homogenous, telcos are offering a standard product with variation in prices. "Within prepaid, which is the largest segment, there can be many sub-segments. The sector has a lot of unutilised capacity, and there's a possibility of new operators coming in with specialised services for students, migrants, etc.," says Gartner's Nandan.

All told, the telecom sector is in a shambles. It remains to be seen how things could change. The only hope is that things would turn for the better. That will depend on sensible policies and regulations that do not look to squeeze the sector. BT

@manukaushik


Kitchen Se Plate Tak
INDIA TODAY GROUP
Nutrela
LIVE HEALTHY. LIVE HAPPY.
FOOD तक
Watch Now
FoodTak.in
Offers you mouth watering recipes & cooking tips from India's best home cooks
foodtak.in is a dedicated mobile channel of MOBILE तक a portfolio of niche digital channels


Government of India
Ministry of AYUSH
YO
Live Life to its
International Day
https://ay



GA
Yoga for Harmony & Peace
full Potential...
of Yoga - 21st June
ush.gov.in, https://yoga.ayush.gov.in
https://www.facebook.com/moayush
twitter.com/moayush

STRESS RELIEVER

He has been buying stressed assets across the world for the last five years. Now NRI Sanjeev Gupta has turned to India. Who is this man and will he succeed?

By Nevin John
Photograph by Danesh Jassawala

SANJEEV GUPTA,
Executive Chairman,
Liberty House Group

THE MAN AND HIS COMPANY have repeatedly been in the news in recent months, as the process of selling off stressed assets under the new Insolvency and Bankruptcy Code (IBC) – passed in May 2016 – gathers steam. When bids were invited for shipbuilding company ABG Shipyard, Sanjeev Gupta's Liberty House was the only company to respond, even raising its offer to ₹5,600 crore when the initial bid was rejected as too low. Liberty House was the higher of the two bidders for auto parts maker Amtek Auto, quoting ₹4,334 crore, as it was for steel manufacturer Adhunik Metaliks.

Liberty House entered the fray for Bhushan Steel after the bid deadline but with an offer of ₹18,500 crore. Though it was substantially larger than the second highest bid of Tata Steel at ₹17,000 crore, it was rejected as it came after the deadline. The proposed acquisitions are all facing hurdles, notably because it emerged that Liberty House owed Exim Bank around $2.8 million and was thus liable for disqualification under Section 29A of the IBC – though Gupta insists he has since paid up – but there is no doubt that both Gupta and Liberty House suddenly loom large over India's business landscape.

Who is Sanjeev Gupta? He is a 47-year-old NRI billionaire, headquartered in the UK, whose Liberty House, part of the conglomerate called Gupta Family Group (GFG) Alliance, has been making an astonishing series of acquisitions of loss-making companies over the past five years. The assets range from the UK and France to Australia, encompassing the US. "We have taken over around 50 assets investing $3 billion since 2013," Gupta told *Business Today*.

The bigger acquisitions include global mining and metals' giant Rio Tinto's aluminium smelter plants in Scotland and France, for $412 million and $500 million, respectively; the takeover of Australian mining and materials' company Arrium for $750 million, as well as steelmaker ArcelorMittal's Georgetown Steelworks in South Carolina, US, for an undisclosed amount. Another big buy was Tata Steel's specialty steel division in the UK for $134 million. Indeed, Liberty House was in talks to buy up Tata Steel's entire loss-making UK steel operations before Cyrus Mistry's abrupt removal as Tata Sons chairman in November 2016 put paid to the negotiations. It has also bought up Amtek Auto's UK assets.

GFG Alliance comprises chiefly Liberty House, engaged in steel and aluminium manufacturing, commodities trading, recycling and auto engineering and components businesses, run by Gupta; SIMEC, a clutch of companies involved in renewable energy, mining, ports and more, set up and run by Gupta's father Praduman Gupta; JAHUMA Estates, which owns vast land parcels in the UK and engages in real estate, and financial services companies, including two recently acquired UK banks – Wyelands (formerly Tungsten) Bank and Diamond Bank (to be renamed British Commonwealth Trade Bank, once all the approvals are through). In 2015/16, the group had revenues of around $10 billion, but Gupta expects the figure to have swelled to $15 billion by 2017/18, following the acquisitions since then, with an operating profit of around $500 million. By themselves, Liberty House's financials are more modest – according to filings in the UK, and excluding its steel business, it had revenues of less than $60 million in 2014, with profits of $90,626.

$5 bn

is what Gupta plans to invest in Indian stressed assets alone

Liberty House and SIMEC have made such major acquisitions in Australia – apart from Arrium, they have taken over renewable energy developer and storage battery maker Zen Energy, the Tahmoor coal mine – that Gupta has shifted residence to Sydney with wife Nicola and their three children. His plans for India are wildly ambitious – against the $3 billion spent worldwide in the last five years, he wants to invest $5 billion (₹32,500 crore) in Indian stressed assets alone. He also insists he is not looking only for bargain buys in India, but also wants to invest another $5 billion in financial services, making electric vehicles and acquisition of other assets.

Not surprisingly, some quarters are suspicious. "There are a lot of missing elements in Sanjeev Gupta's success story," says the CEO of an Indian metals company. "He suddenly surfaced with a large bounty to buy assets from companies like ArcelorMittal, Rio Tinto and Tata Steel. It's not clear how he made his wealth. If huge corporations failed to turn these sick assets around, how will he?"

No Mystery Man

Gupta, however, appears willing to talk about himself and his rise. He says he was born wealthy, with his father owning steel-rolling mills in Ludhiana and Pune. Later his father and uncles added a bicycle-making business – the birth of SIMEC. The business grew and expanded to Nigeria, where they started more businesses. His uncles continue to run businesses in Nigeria. Born in Ludhiana, Gupta did his final schooling in the UK.

"At the beginning of my Class X, when I was around 14, I went to London to visit my elder brother who was already studying there," he says. "I found the UK interesting and told my parents I didn't want to return." His parents acquiesced, and he was enrolled in a school at Canterbury, Kent. Gupta went on to Trinity College, Cambridge. His business genes were already at work – while at college itself, in 1992, he started Liberty House, initially as a trading company which sold caustic soda and other chemicals to Nigeria, bought from Imperial Chemical Industries (ICI). "I was called 'Mr Caustic Soda' in those days, but, in fact, we were supplying around 80 products to Nigeria, from rice and fish to fast-moving consumer goods to mosquito coil, glass and paper," he says. "Later we started industrial production in Nigeria itself and cut down on sourcing."

The first sick company Gupta tried to buy was Alpha Steel in Newport, UK, in 2007, but he was outbid by a Russian company, which renamed it Mir Steel. But Mir Steel failed to take off as well, and was finally sold to Gupta in 2013. The company is still struggling, but is much better off than before. "In its heyday, the plant made one million tonne (MT) of steel annually, but now makes half that much," says Gupta. "We're in the process of restarting the blast furnaces to take it to 1 MT." But he has been able, over two years, to resolve all the 100-odd legal wrangles Mir Steel was embroiled in.

Gupta's big opportunity came with the crash in global steel prices in 2015. It left Tata Steel's UK business tottering, and also led to the collapse of many other steel plants, among them those of high-profile NRI industrialist Swaraj Paul's Caparo Group. A number of Caparo companies went up for sale around the time Mir Steel went on stream, and Gupta bid for all of them. "There were 20 plants across the country employing 2,000 people," he says. Ultimately, however, he was able to acquire just two – Caparo Tubular Solutions, with around 350 employees, and Caparo Merchant Bar, with about 150.

Thereafter acquisitions by both Liberty House and GFG Alliance multiplied. Liberty House bought Am-

AN ARRAY OF ACQUISITIONS

Liberty House and its sister companies – SIMEC and Jahuma Estates – forming the Gupta Family Group (GFG) Alliance, have made around 50 acquisitions in the last five years. Some prominent ones:

2018

Diamond Bank, UK
Rio Tinto's aluminium smelting unit, France **($500 million)**
Tahmoor Coal Mine, Australia

2017

Caparo Merchant Bar, UK
Georgetown Steelworks, US
Arrium, Australia (Mining and materials' company) **$750 million**
Whyalla Steelworks, Australia
ZEN Energy, Australia (storage battery manufacturer)

2016

Tata Steel's specialty division, UK **(£100 million)**,
Rio Tinto's Scottish aluminium smelter **($412 million)**
Wyelands Bank, UK

2015

Caparo Tubular Solutions, UK

2013

Mir Steel, UK

tek Auto's bankrupt units in the UK, CovPress and Shiftec, making it – according to Gupta – the largest auto components player in the country, while the parent conglomerate acquired France-based aluminium wheels manufacturer, AR Industries. With the purchase of the aluminium smelting unit in France from Rio Tinto, the auto business and the upstream aluminium business were integrated. Tata Steel's specialty steel mills followed. There were more acquisitions in steel, auto and aluminium. Liberty House's steelmaking capacity alone is around 8 MT.

To save on power costs, Gupta bought a thermal power plant near the Mir Steel unit in Newport and converted into a captive waste-to-energy plant. So too, Zen Energy in Australia is helping meet the power needs of Arrium, the sole maker of long steel in that country. Other power plant purchases have given GFG Alliance a portfolio of around 1,000 MW. Alongside came the foray into financial services, with Gupta acquiring Wyelands Bank and Diamond Bank, an insurance company, an investment banking advisory business and a fintech platform. Overall, GFG Alliance now has a presence in 30 countries, with over 11,000 employees at 200 locations. Its trading business spans 60 countries.

It plans to grow even more. Gupta hopes to build steelmaking capacity of 10 MT in Australia alone, along with 10,000 MW of renewable energy plants. In the US, Georgetown Steelworks will start operations this month, and more acquisitions will follow. In France, he wants to set up an aluminium car body making unit alongside the smelter plant, with an investment of $3.5 billion.

But where does the money for all these acquisitions come from? "Since we're a private business house, people don't know the kind of wealth created by our companies," says Gupta. "Our family has significant financial resources. Our internal accruals are huge. But it is only from 2013 that we have started acquiring and also telling our story to the world." He maintains he has never taken loans to fund acquisitions so far, though this may well change in future. "We will raise debt capital and look at public listing of some of our companies as well for our future acquisitions and expansions," he says.

No doubt, Gupta's sudden prominence has spawned critics and sceptics. "The suspicion is that most of the assets were bought at zero value when the metals and commodity businesses were in shambles," says Sanjay Sethi, Managing Partner and CEO of financial consultancy firm, Nestor Consulting. "But those who bought the distressed will have to repay at least a part of the debt as well." (Gupta denies this, maintaining he has taken over only the employees and the assets of the acquired companies, not their liabilities.) UK media reports have noted that Liberty House is registered in the tax haven of the Isle of Mann, while SIMEC operates through a complex web of companies stretching from Wales to Singapore.

ACQUISITION TARGETS IN INDIA (Offer price)

Bhushan Power and Steel
₹18,500 cr

Amtek Auto
₹4,334 cr

ABG Shipyard
₹5,600 cr

Adhunik Metaliks
₹600 cr

Plans for India

At present, Gupta does not even have a corporate office in India, though he intends to set up one in Mumbai's Bandra-Kurla complex soon. But he does own large swathes of land – all those locations where his grandfather's steel-rolling mills once stood. "After my father gave away the bicycle business to his brothers, we have no business left in India," he says. But that is soon going to change. "Our biggest story this year will be in India," he adds. "In the last decade, there was much pressure on me to build something in India, but this is a tough country to do business in, so things have been delayed."

He tried to enter India twice before, but failed both times – in 2003 and 2010/11. This time too, there have been hiccups, notably Exim Bank's pending dues from Liberty House, which he hopes will now cease to be an issue. Gupta was also late in bidding for BPSL, doing so well after the deadline of early February this year, which prompted the resolution professional (RP) handling the matter to refuse considering it. Rival bidder Tata Steel also insisted the bid be rendered invalid. The NCLT, however, has rejected this plea and Liberty House is back in the running. Not that it means BPSL is a cinch for Gupta. Under the IBC, the RP is required to consider several aspects of every bid, not just the valuation offered. "There is lack of clarity about the group structure of GFG," says a lawyer on condition of anonymity. "They call it an alliance, but Liberty House and SIMEC sometimes do business together."

Gupta intends to bid for more steel assets in India. "We are negotiating with other small steel companies," he says. He also plans to enter financial services in the country and manufacture EVs, using the Amtek Auto platform once he gains control of the company. Liberty House has associated with Formula 1 car designer Gordon Murray, who designed iStream – the light car body structure which will be used for EVs. "We want to launch it in India and Australia in the next two years," he says. BT

@nevinjl

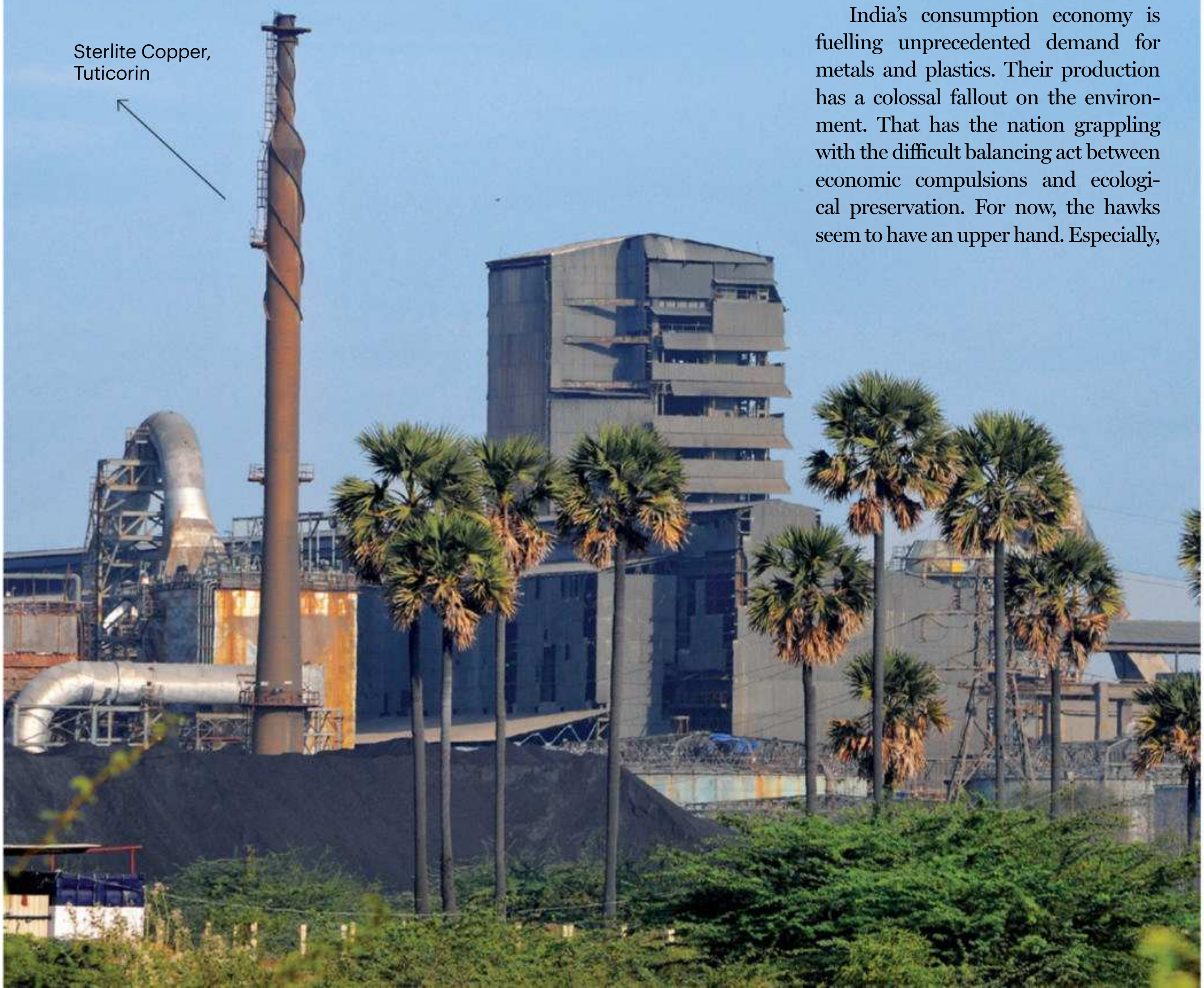
VEDANTA'S GREEN WOES

Tuticorin is just one of the many instances of alleged environmental law violation by the group.

By RAJEEV DUBEY

THE SHUTTING down of Sterlite Copper's operations at Tuticorin in Tamil Nadu shrinks the revenue of global metals and mining major's UK parent Vedanta Resources by nearly 25 per cent. It also deals a big blow to its attempt to reposition itself as an environmentally and socially responsible mining company, and infuses a wild uncertainty into its operations and balance sheet both in India and abroad.

India's consumption economy is fuelling unprecedented demand for metals and plastics. Their production has a colossal fallout on the environment. That has the nation grappling with the difficult balancing act between economic compulsions and ecological preservation. For now, the hawks seem to have an upper hand. Especially,



Sterlite Copper, Tuticorin

when politics hijacks one for the other at various points – as it did in Tuticorin. "Closure of the Sterlite Copper plant is an unfortunate development, especially since we have operated the plant for over 22 years in the most transparent and sustainable way, contributing to Tuticorin and the state's socio-economic development," says Vedanta Group Founder and Chairman Anil Agarwal.

"We expect the company's scale, as measured by pro forma revenue for fiscal 2018, to decline by 25 per cent to $11.5 billion from $15.4 billion," says Moody's Research.

Tuticorin is among a long list of environment-related allegations and protests that have engulfed Vedanta's businesses time and again. Some substantiated allegations and also often unsubstantiated ones have taken a toll on the group's investments and businesses in India and abroad. Vedanta Resources not just has to cope with nearly ₹4,500 crore that has been sunk into the projects facing protests and shutdown, but also with the harsh reality of the opportunity cost of $4 billion of annual revenue loss in these investments. "We have strong reason to believe that the current protests are being orchestrated by anti-developmental activists," says Agarwal.

In Tuticorin this year, more than the investment, it's the revenue foregone that has stung the company. The closure of the Tuticorin facility alone will cost Vedanta nearly $2.8 billion annually at current market rates of copper. Sesa Goa closure has an opportunity cost of over $1 billion in revenue every year. Though the closure will hurt top line badly, the impact on bottom line will be marginal. "We don't expect the closure to be materially negative for Vedanta's cash flows because the smelting operations provided only about 5 per cent (roughly $200-225 million) of Vedanta's gross annual EBITDA," says S&P Global ratings. Vedanta believes it's a ₹1,308 crore hit on group EBITDA.

Yet, the Indian holding company Vedanta Limited's market-cap has fallen nearly one-third since the beginning of this year from $19.6 billion on January 2 to $13.6 billion on June 5. In between, it even peaked to $20.34 billion on January 26. Of course, a big reason is the fall in global zinc prices and aluminium prices which are the mainstay of the group. Zinc prices are down from $3,600 per tonne during Feb-March this year to $3,173 now. Aluminium prices have fallen from a peak of around $2,600 per tonne in April to around $2,300 per tonne today. But trouble had been brewing at Tuticorin for at least 100 days and that's reflecting in the market capitalisation, too.

Tuticorin is just the latest. Around the same time, in Zambia, Vedanta subsidiary Konkola Copper Mines faced agitation from locals for allegedly polluting local water bodies through waste from its copper mines. Over 1,800 Zambian villagers have since won the right to sue Vedanta in London courts after Court of Appeal dismissed an appeal by Vedanta and Konkola. The mining operations there are barely breaking even despite the group investing nearly $3 billion in the project. It has now promoted its star executive Deshnee Naidoo as CEO of Vedanta Africa Base Metals to help turn around the unit.

Earlier, in 2014, it had another stir waiting in Goa where Vedanta-owned Sesa Goa operated 5.5 mtpa of mining operations. The Supreme Court cancelled all mining leases, including that issued to Sesa Goa between 2007 and 2012. It was in 2012 that SC had suspended all mining in the state after Justice Shah Commission reported violation of environmental laws by miners. Iron ore operations of 20 mtpa came to a halt in the state.

Before that, in 2013 at Niyamgiri in Odisha, Vedanta faced allegations of trying to mine Bauxite from a 'sacred' hill to supply to Vedanta Aluminium's the then 1 mtpa alumina refinery at nearby Lanjigarh. The 30-odd families in Lakhapadar village unanimously voted against mining once Supreme

BRUSHES WITH CONTROVERSY

YEAR 2018
LOCATION: Tuticorin, India
ENTITY: Sterlite Copper

Protest against plans to double smelter capacity. Protestors say environmental pollution from the copper plant has led to health issues among the locals

IMPACT
Plant shut;
Government orders permanent closure;
Company to contest

YEAR 2014
LOCATION: Goa
ENTITY: Sesa Goa

SC quashed mining licences in Goa based on the Justice Shah Committee recommendation, which alleged violation of environmental laws by mining firms, including Sesa Goa

IMPACT
Mining licences cancelled

YEAR: 2013
LOCATION: Niyamgiri, India
ENTITY: Sterlite

It has been alleged that Vedanta expanded capacity without environment clearance and was to mine bauxite from a sacred hill in Niyamgiri

IMPACT
Mining could not take place;
Lanjigarh refinery running but intermittently closed for shortage of bauxite

YEAR: 2016
LOCATION: Chingola, Zambia
ENTITY: Konkola Copper Mines
Waste from the mine allegedly polluted waterway and caused personal injuries

IMPACT
Over 1,800 Zambian villagers won the right to sue Vedanta in London courts

PHOTOGRAPH BY RACHIT GOSWAMI

"WE HAVE STRONG REASON TO BELIEVE THAT THE CURRENT PROTESTS **ARE BEING ORCHESTRATED** BY ANTI-DEVELOPMENT ACTIVISTS"

ANIL AGARWAL/ Founder and Chairman / Vedanta Group

Court in April 2013 ordered that forest clearance to mining was only possible after taking consent from the Gram Sabha. The environment ministry had already withdrawn forest clearance in 2010 following protests once the refinery began operations in 2007. The refinery on which the company has so far sunk ₹10,000 crore has a capacity of 2 mtpa and had drawn plans to expand to 6 mtpa. With raw material bauxite not coming from Niyamgiri, the refinery has been sourcing bauxite from other locations but has been shut and opened several times intermittently for shortage of bauxite, often running at below its rated capacity.

"In the past too, other companies such as Tata, Maruti, Hindalco, etc., have faced such events. Unfortunately, misinformation spread by vested interests gets taken on face value by the public at large, leading to such incidents. But it becomes dangerous when anti-social elements masquerade as activists," says Agarwal.

These agitations have come at a significant cost to humans and their livelihood. The Tuticorin protests had been on for over 100 days, but took a turn for the worse when protestors began ransacking and putting vehicles and public property on fire. Police action claimed 13 lives while two dozen others were injured. The closure of the plant has already claimed 32,500 jobs from contract workers and 800-odd associated units. About 1,000 more on the company's rolls await their fate as Sterlite prepares to challenge the state government's closure order in courts.

On March 27, Sterlite Copper went into a once-in-four-year planned and 'extended' shutdown for 45 days for repairs and maintenance activities until the first week of June. It was planned to coincide with the timing of renewal of licence to operate the plant. However, the Tamil Nadu Pollution Control Board refused to renew the licence starting April citing three major violations: that the plant does not comply with environmental laws; has dumped copper slag in the river; and has failed to provide reports of the groundwater analysis of nearby borewells. Sterlite denies all these charges. In fact, the board rejected the company's application to renew the licence to operate the plant beyond March, 2018. "We have the confidence to undergo scrutiny by any technical committee and prove to the people that all the allegations related to health concerns were done with mala fide intentions," says Agarwal.

Why has the TN Pollution Control Board not cleared the licence to operate? "I don't know. The reasons would be best known to them. Whatever reasons they have stated, we've already been complying with. They themselves have been coming on a monthly basis and taking groundwater samples," says Sterlite Copper CEO P. Ramnath.

Mining is not a business for the faint-hearted. The reason it attracts such agitations is because extraction of metal from ore requires chemical processing. The effluent and gases need to get treated and slag needs to be disposed. Neither is that environment-friendly, nor does it ever extract all harmful substances. It's this residue that can be harmful for humans if it enters their eco-system via air or water.

Hence, mining operates at the volatile intersection of environment, business, land owners' rights, and politics. Managing any one of them is a tricky affair. Managing them all together is a recipe for hypertension. "My request is to keep business away from politics. All over the world, successful economies don't mix politics with business. Having said that, it is very important for the government to get to the bottom of this episode," says Agarwal. But for the moment Agarwal will have to pay the price for the alleged indiscretion – however fair or unfair it may be. The legal battles may go on for decades, but the financial repercussions have to be dealt with now. BT

@rajeevdubey

PHOTOGRAPHS BY SHEKHAR GHOSH

"GST HAS BEEN GOOD FOR THE COMPLIANT TEXTILE PLAYERS"

Sanjay Lalbhai can trace his family history 17 generations – all the way back to the court of Akbar the Great. The textile business was launched by his great grandfather Lalbhai Dalpatbhai when he started the Saraspur Cotton Mills in 1897. Sanjay Lalbhai got into the business in the 1970s, when the sector was under severe pressure because of the Licence Raj and the rise of the unorganised powerloom sector. He took a decision to first move into denims, which would help him build a global scale business. Then he decided to build brands – Arrow, GAP and others. The group has revenues of about ₹11,000 crore currently. Now, he is taking the next step with his two sons – Punit and Kulin – by focussing on technical textiles, customised retail solutions and others. In a freewheeling interview with **Prosenjit Datta**, he talks about how GST has helped his textile business, the philosophy behind the brand strategy, why he did not diversify into newer areas, the future of textiles and the Arvind Group, and finally, what he sees as the role of the promoter of a business vis-à-vis the role of professionals. Edited excerpts.

Has the economy settled down?

SANJAY LALBHAI: We can see some green shoots. Some businesses have started doing well. Automobiles for one; FMCG also – the HUL numbers are good. Some businesses connected with agriculture are doing well. So are private banks. Some financial sector companies are doing well, not all. I think travel, leisure are doing well. But many manufacturing and export-oriented sectors are still struggling in the aftermath of demonetisation.

Has GST settled down as far as your business is concerned?

Yes, if you look at textiles, GST has been good for the compliant players. Why couldn't anyone consistently create huge shareholder value or build humongous scale textile companies earlier? After all, *roti, kapda* and *makaan* are very basic needs. You have a DLF in real estate but no one could create a DLF in textiles.

When I joined the business in 1978, powerlooms created the major mess. All organised players came to grief. There was Licence Raj, so you were not allowed to grow and you could never build scale. Before we could come out of the Licence Raj, the powerlooms took over. They were completely unorganised – no license, no tax, no labour laws – while we were supposed to live in a world where everything was controlled.

Then liberalisation came, but the unorganised sector flourished. So if you really see, we had to survive by bringing denim into this country. Had we not looked at a new global product category, which was not restricted to India, we would not have been able to compete with powerlooms. That's why we thought of denim. That saved us.

The unorganised sector, till the advent of GST, has had the bigger market share in the entire \$80-billion textiles space. So, the organised sector would be 15 per cent, while the unorganised would be 85 per cent. Now this entire thing is going to get rewritten. And once GST is really enforced – GST has been introduced, still not been enforced and all the loopholes have not been plugged – this industry will dramatically change.

The second-biggest change is the bankruptcy code. All the small, even large organised players who were evergreening their loans, taking advantage of the subsidies dished out in this industry and really misusing those are getting weeded out. They are all going into insolvency and they will be liquidated.

So, the genuine, honest players, for the first time since I've joined this industry, will come into play now. We're quite excited because this is now a level playing field.

Are you planning to buy anything under the IBC process?

Why should we buy? The government still provides huge incentives to create new assets. Also, the firms under bankruptcy proceedings have old cultures and businesses have been mismanaged and overleveraged. Of course, you'll pay the right price and I am not saying there will be no bidders but we are not interested.

I would rather set up an asset light play where you create an eco-system, you create IPRs, you create closeness with the end-consumer, and you become part of their supply chain – H&M, Zara, GAP or Levi's. So, you give them a complete solution up to garment, innovation, design and you do only things which are proprietary or which you don't want to give out to the others. All other parts – spinning, weaving, etc. – are not rocket sciences.

How much revenue comes from this part?

We are a ₹11,000-crore group. I think a good ₹10,000 crore would be textiles plus brand businesses. So, brand is becoming very big – around ₹4,000 crore and growing at around 25 per cent.

In the early '90s, I saw that instead of textiles, the

"IN THE EARLY '90S, I SAW THAT INSTEAD OF TEXTILES, VALUE WILL LIE IN CREATING BRANDS"

value will lie in creating brands because they are aspirational, there is stickiness. You can create differentiation and scale. But, then people were getting things made by neighbourhood tailors and so we were quite ahead of our time. We were the first to bring Arrow, Lee and Wrangler.

The first standalone ready-to-wear foreign brand store was built by Arvind for Arrow. And we didn't visualise Arrow as a mass brand which it was in the US – we saw that it should be a premium, formal shirt and that's how we repositioned Arrow for India. So, ever since 1992, when Arrow was among the first brands to come to this country, we brought in many global brands and are the largest or second-largest platform for international brands in this country. Over the years, we have nurtured few businesses because we happened to get into them as we had to develop capabilities for our textile business.

Yes, many of your diversifications came as an off-shoot of your textile business...

Yes, in the early '90s we were doing very well. We thought of gross diversification – from refineries to telecom and many other sectors. We brought in a consulting firm and it said stick to the core. C.K. Prahlad said stick to the core. But I dabbled in many things at that time. We had already started diversifying – we got into telecom. We have a very small business in telecom. Our engineering business, Anup Engineers, was started by my father. The water business was started because we built our zero-discharge facility when we set up our Santej Complex, one of the largest shirting complex, in 1997. We got into real estate business because we had a land bank and we thought we need to monetise it and we created the capability.

Has the real estate business started doing well after demonetisation and GST? Also, you are building those large-scale industrial parks in your real estate business...

That's what we started because we had those large land banks. But we built houses in Bangalore for executives. We built mid-priced, executive high-end housing. It is a small business but growing very well. Be it real estate, be it water, we have got the basics right.

Then sometime ago, I had seen that technical textiles would play a very important role in India. So, it started. Then Punit (Lalbhai, Executive Director, Arvind Limited and elder son of Sanjay Lalbhai) came back and he started giving it the kind of focus it needed. I had started taking Arvind from B (business) to C (consumer) – Arvind as a brand rather than Arvind as a fabric which I am selling B2B, to H&M and other brands. Then, Kulin (Lalbhai, Executive Director, Arvind Limited and younger son of Sanjay Lalbhai) came back and said I'm interested in the B2C business and built the Arvind Store.

We were very clear about the journey. It was from tailoring to ready-to-wear and from there to brands. And from brands it is going to be customisation. That is where we are headed. So after brands, the new territory to be won would be using big data and predictive analysis to know exactly what you want and giving you a mass customised solution, which is unique and tailored to what you are. That is all being nurtured by Kulin.

How is the technical textiles business shaping up?

Technical textile is a very interesting space – it is based on the growth of the Indian economy. Protective clothing, for example, will now become mandatory if you're working in a steel plant or a refinery. You will have to wear protective clothing for fire and other hazards you will face. In defence, you will have to wear bullet proof. All these things will become mandatory.

Now that the Indian economy is developing, specialised textiles will be required for all sorts of applications, from industrial end-use to medical, to roads, to new materials like composites which are going to be used for aerospace or automobiles to low cost, non-corrosive housing, etc. It is growing very rapidly. We will again build it as an IPR-led business, with a lot of collaborations, a lot of unique materials, through a lot of R&D, a lot of patented processes, products and services.

You had evaluated refineries but did not get into it because of the advice of your consultant.

I had selected telecom and thought of refinery, too, at that time but they advised against it.

But you had already started telecom so you were stuck with it.

Yes, we were bidding with French Telecom for all the circles. So yes, we evaluated everything... paper, steel.

In retrospect, does it seem like the right decision, given the kind of troubles in telecom?

Well, some people made it big in telecom just as they did with refineries. My thought process was that we needed to be in businesses where it was possible to build size and scale. We were becoming the biggest in denims but it was still a fragmented sector and politically you have so many tariffs and barriers in textile as an industry across the world. I was arguing with our consultant that if I want to achieve scale, I have to get into businesses where you have multibillion dollar companies and there's already a roadmap. The question was – would you succeed? You require government patronage, approvals and phenomenal execution skills and, of course, resources. Arvind was equally capable of raising resources. When I had done my first roadshow and the first GDR, we had raised multibillion dollars at that time and it was unprecedented for textiles, so we could have easily raised capital. It was not beyond us to get into these areas, but I don't know whether it was the correct decision or wrong.

You didn't think of getting out of textiles even during the worst days when powerlooms were killing the industry?

Because denim did so well there was no question of getting out. We had solved the problem. The question was – should we have diversified and how do we get into scale businesses. Now you can. You can be a \$20-billion brand company, a \$10-billion water business, a \$5-billion advanced materials (technical textiles) business rather than a \$2-3-billion textile company.

You built many brands but own a few. Several are licensed brands that you have nurtured like Arrow or GAP. Is there a danger that they might want to come in on their own?

Some are perpetual licences and some are very long-term licences, so they cannot be terminated. By that time, if it has become a multibillion dollar valuation business and then if the owner of the brand wants to buy me out, he is most welcome. We are creating shareholder value and, who knows, I could become so large that I may want to buy a global brand.

"I AM DIVERSIFIED. I AM NOT TALKING ABOUT CLOTHING. TECHNICAL TEXTILE IS A NEW-AGE SOLUTIONS BUSINESS"

Now the world has changed so dramatically since you last considered diversification, are you tempted to look at new businesses again?

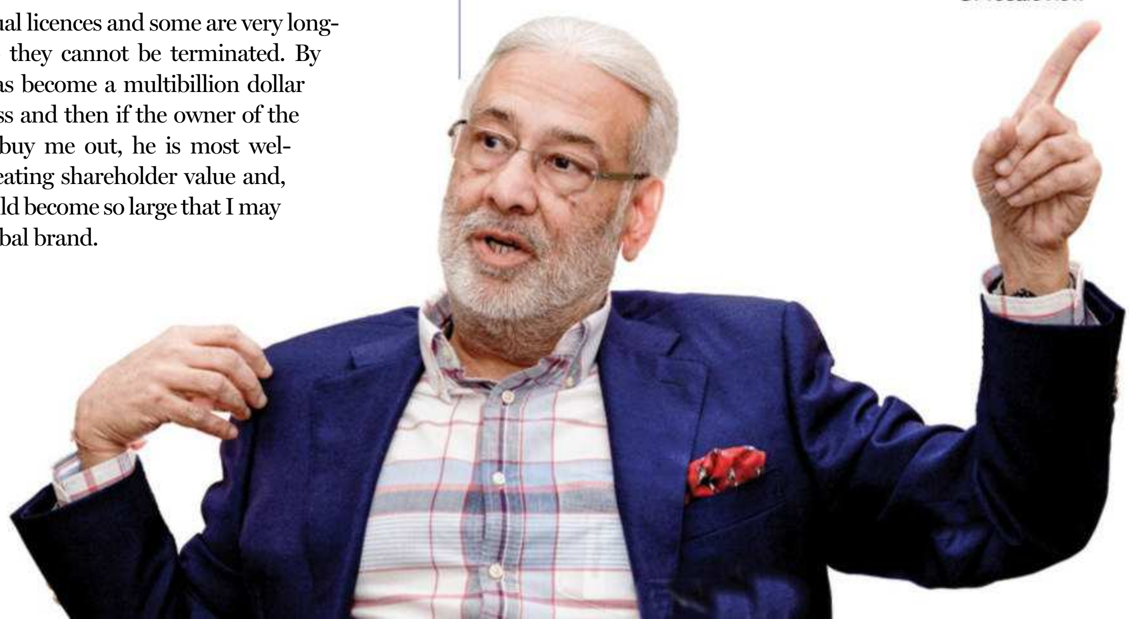
I am diversified. I am not talking about clothing or something conventional. Technical textile is a new-age solutions business. It is about creating intellectual property rights and solutions – it is not about building more conventional factories, assets, etc. It is at the cutting-edge of solving problems or inventing new things.

So your focus now is on technology?

That's what I am saying. As a promoter, my time is better spent in inventing things rather than managing because my businesses are run pretty well and the professional managers are better managers than me by a long shot. So, why do I need to do that? But this (inventing and seeding new business) is not their brief. After all, who will take that risk when there is a 100 per cent chance of failure because it has never been done before. So, when I say that I want to use indigo on every consumable medium in the world from marble to nylon to leather to wood, it's never been done before and someone has to make a statement.

When I am saying this, about indigo for example, even I am not sure whether it can be done. It is just a thought. It is not backed yet by reality. I personally think everything starts when the thought comes. You have to think and you have to have the courage to think without inhibitions. BT

@ProsaicView



Harvard Business Review

MANAGERS CAN'T BE GREAT COACHES ALL BY THEMSELVES

THE BEST ONES ARE CONNECTORS.

Illustration by Safia Zahid

I

IN A UTOPIAN corporate world, managers lavish a constant stream of feedback on their direct reports. This is necessary, the thinking goes, because organisations and responsibilities are changing rapidly, requiring employees to constantly upgrade their skills. Indeed, the desire for frequent discussions about development is one reason many companies are moving away from annual performance reviews: A yearly conversation isn't enough.

In the real world, though, constant coaching is rare. Managers face too many demands and too much time pressure, and working with subordinates to develop skills tends to slip to the bottom of the to-do list. One survey of HR leaders found that they expect managers to spend 36 per cent of their time developing subordinates, but a survey of managers showed that the actual amount averages just 9 per cent – and even that may sound unrealistically high to many direct reports.

It turns out that 9 per cent shouldn't be alarming, however, because when it comes to coaching, more isn't necessarily better.

To understand how managers can do a better job of providing the coaching and development up-and-coming talent needs, researchers at Gartner surveyed 7,300 employees and managers across a variety of industries; they followed up by interviewing more than 100 HR executives and surveying another 225. Their focus: What are the best managers doing to develop employees in today's busy work environment?

After coding 90 variables, the researchers identified four distinct coaching profiles:

Teacher Managers coach employees on the basis of their own knowledge and experience, providing advice-oriented feedback and personally directing development. Many have expertise in technical fields and spent years as individual contributors before working their way into managerial roles.

Always-on Managers provide continual coaching, stay on top of employees' development, and give feedback across a range of skills. Their behaviours closely align with what HR professionals typically idealise. These managers may appear to be the most dedicated of the four types to upgrading their employees' skills – they treat it as a daily part of their job.

Connector Managers give targeted feedback in their areas of expertise; otherwise, they connect employees with others on the team or elsewhere in the organisation who are better suited to the task. They spend more time than the other three types assessing the skills, needs, and interests of their employees, and they recognise that many skills are best taught by people other than themselves.

Cheerleader Managers take a hands-off approach, delivering positive feedback and putting employees in charge of their own development. They are available and supportive, but they aren't as proactive as the other types of managers when it comes to developing employees' skills.

The four types are more or less evenly distributed within organisations, regardless of industry. The most common type, Cheerleaders, accounts for 29 per cent of managers, while the least common, Teachers, accounts for 22 per cent. The revelations in the research relate not to the prevalence of the various styles but to the impact each has on employee performance.

The first surprise: Whether a manager spends 36 per cent or 9 per cent of her time on employee development doesn't seem to matter. "There is very little correlation between time spent coaching and employee performance," says Jaime Roca, one of Gartner's practice leaders for human resources. "It's less about the quantity and more about the quality."

The second surprise: Those hypervigilant Always-on Managers are doing more harm than good. "We thought that category would perform the best, so this really surprised us," Roca says. In fact, employees coached by Always-on Managers performed worse than those coached by the other types – and were the only category whose performance diminished as a result of coaching.

The researchers identified three main reasons for Always-on Managers' negative effect on performance. First, although these managers believe that more coaching is better, the continual stream of feedback they offer can be overwhelming and detrimental. (The Gartner team compares them to so-called helicopter parents, whose close oversight hampers children's ability to develop independence.) Second, because they spend less time assessing what skills employees need to upgrade, they tend to coach on topics that are less relevant to employees' real needs. Third, they are so focussed on personally coaching their employees that they often fail to recognise the limits of their own expertise, so they may try to teach skills they haven't sufficiently mastered themselves. "That last one is a killer -- the manager doesn't actually know the solution to whatever the problem is, and he's essentially winging it and providing misguided information," Roca says.

When the researchers dove deep into the connection between coaching style and employee performance, they found a clear winner: Connectors. The employees of these managers are three times as likely as subordinates of the other types to be high performers.

To understand how Connectors work, consider this analogy from the world of sports: A professional tennis player's coach may be the most important voice guiding the player's development, but she may bring in other experts – for strength training, nutrition, and specialised skills such as serves, lobs, and backhands – instead of trying to teach everything herself. Despite this outsourcing, the coach remains deeply involved, identifying expertise, facilitating introductions, and monitoring progress.

Encouraging managers to adopt Connector behaviours may require a shift in mindset. "Historically, being a manager is about being directive and telling people what to do," Roca says. "Being a Connector is more about asking the right questions, providing tailored feedback,

ABOUT THE RESEARCH *"Coaching vs. Connecting: What the Best Managers Do to Develop Their Employees Today," by Gartner (white paper). This article was first published in May-June 2018 issue of* Harvard Business Review **(www.hbr.org).** *Copyright@2018 Harvard Business School Publishing Corporation. All rights reserved.*

and helping employees make a connection to a colleague who can help them." The most difficult part is often self-knowledge and candour: Being a Connector requires a manager to recognise that he's not qualified to teach a certain skill and to admit that deficiency to a subordinate. "That isn't something that comes naturally," Roca says.

To get started, the researchers say, managers should focus less on the frequency of their developmental conversations with employees and more on depth and quality. Do you really understand your employees' aspirations and the skills needed to develop in that direction? Next, instead of talking about development only one-on-one, open the conversations up to the team. Encourage colleagues to coach one another, and point out people who have specific skills that others could benefit from learning. Then broaden the scope, encouraging subordinates to connect with colleagues across the organisation who might help them gain skills they can't learn from teammates.

For employees, one message from this research is that you're better off working for a Connector than for one of the other types. So, how can you recognise whether someone is in that category – ideally before accepting a position? Roca suggests asking your prospective boss about his coaching style and discreetly talking with his current direct reports about how he works to upgrade subordinates' skills.

For managers and subordinates, the research should redirect attention from the frequency of developmental conversations to the quality of interactions and the route taken to help employees gain skills. Says Roca: "The big takeaway is that when it comes to coaching employees, being a Connector is how you win."

"A MANAGER CAN'T HAVE ALL THE ANSWERS"

A 107-year-old company in a fast-changing industry, IBM has a history of adapting to shifts in technology. It's currently in the midst of one such change, as its customers migrate to cloud-based, software-as-a-service solutions. **Jason Trujillo**, IBM's Director of Leadership Development, spoke with *HBR* about how the shift to Connector-style coaching is helping drive that change. Edited excerpts follow.

Q: Why are you making this shift now?

A: IBM's cultural transformation is aligned with the reinvention of our business, with almost half our revenue coming from businesses we weren't in six years ago. We've fully embraced design thinking and agile methodologies, which changes the way we work and assemble teams to drive value for our clients. It requires more Connector behaviours from all IBMers. We're systematically creating opportunities for learning through peer-to-peer coaching.

What are the advantages of this approach?

It's more market-driven. Too often learning and development teams focus on creating and pushing out new kinds of programmes for employees – the incentive is really around creation. This approach recognises that there's a lot of value in "pull" – when people seek what they need. It also offers advantages in cost and speed. Rolling out training to 370,000 people requires a lot of resources and significant time. Connecting with peers is more efficient, and as this approach has taken hold, it's driven a much more viral network effect.

How do employees find colleagues with the right skills to coach them?

We created a marketplace platform called Coach.me for coaching needs and solutions. Whether someone needs to learn a hard skill, like writing a certain kind of code, or a soft skill, like improving how she gives feedback, the platform connects her with colleagues who can help. This puts people in control of what they need. And it's connected to our digital learning platform, Your Learning.

What's the incentive for people to spend time coaching a colleague they've never met?

We've made it part of our performance management process, which focusses on five elements: business results, client success, innovation, responsibility to others, and skills. We're creating broad awareness that by helping one another, we're helping IBM grow.

Is there a risk that outsourcing coaching to peers will lead managers to shirk development tasks?

We don't allow managers to abdicate that responsibility. As a manager, I'm still responsible for the success of my employees. I need to demonstrate and model the right behaviour, of constantly learning to keep pace. Our CEO, Ginni Rometty, says very clearly that to be successful at IBM, you need to learn at the exponential pace the market demands. You need the right skills. As for how you get those skills, this approach recognises that a manager can't have all the answers.


Har Khabar Garma Garam
INDIA TODAY GROUP
NEWS तक
Watch Now
NewsTak.in
Quick & Short video updates of what's trending
Newstak.in is a dedicated mobile channel of MOBILE तक a portfolio of niche digital channels

Business Today

SECTOR REPORT CLEANTECH

SAVING THE WORLD

Clean Diesel
Pg 96

The challenges facing India's ambitious electric mobility plans
Pg 86

Solar equipment makers facing the heat from imports
Pg 92

Losing the war on plastics
Pg 102

Operation Cleanup

While the focus on renewable energy has helped, it's time to tackle air and water pollution in a big way.

By Anup Jayaram
Illustration by Ajay Thakuri

WORLD ENVIRONMENT DAY – June 5 – that started off as a concept in 1974 was way ahead of the times. It is only over the past few years that environmental issues – be it water, land or air pollution – have emerged as areas of serious concern. This is also true of India, where many major projects, such as Posco's $12 billion steel plant in Odisha, did not take off due to environmental concerns. The recent agitation over Sterlite's copper plant in Tamil Nadu is another example where environmental concerns have made national headlines.

This year, as India hosts the 43rd World Environment Day for the first time, the theme is Beat Plastic Pollution. That is a huge area of concern globally (See *Losing the War*, Page xx). The focus on plastics is important as the world is looking to eliminate single use plastics such as straws, plastic bags and coffee stirrers.

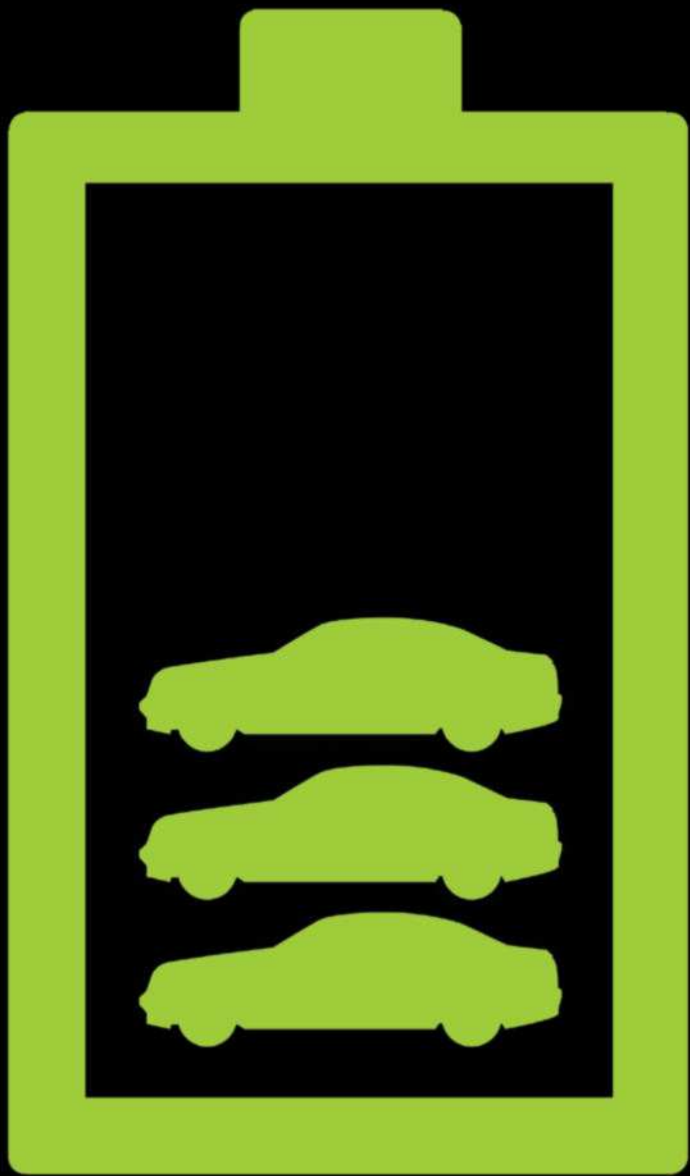
India also has the dubious distinction of being home to 14 of the world's 20 most polluted cities according to the World Health Organisation. The particulate matter (PM 2.5) levels in Kanpur are 17 times more than the WHO safe limit. This is a sea-change from the past, when many Chinese cities were among the most polluted.

The government, on its part, has taken the initiative to generate power from renewable sources. It has set a target of generating 175GW of renewable power by 2022. This includes 60GW of wind power, 100GW solar, 10GW from biomass power and 5GW from small hydro power. It seems to be on track. Already close to 70GW of renewable power has been commissioned and another 40GW is in the pipeline. As things stand, India ranks fourth in wind, fifth in renewable power and sixth in solar power installed capacity. Solar power capacity has risen to 22GW and wind energy to 34GW.

The drive towards renewable power has been helped by 26 per cent fall in solar photovoltaic panel prices in the last year. Most the panels are imported from China. In 2017, India accounted for 31 per cent of China's panel exports. While the renewable energy push is big, much needs to be done on curbing air and water pollution, apart from the degradation due to plastics. It's time the government got into mission mode to tackle these issue like it did with creating renewable energy capacity. The time to act is now. BT

@anupjayaram

175 GW
Renewable energy target set by the government for 2022



Going Electric

India has drawn up ambitious electric mobility plans to reduce pollution and dependence on fossil fuels but the country's electric grid will need a massive overhaul for the plan to succeed.

By Sumant Banerji
Illustration by Nilanjan Das

INDIA ACCOUNTED FOR 14 CITIES in the list of 15 most polluted cities released by the World Health Organization last month. Kanpur, Patna, Gwalior, Varanasi, Lucknow or New Delhi and its satellite towns Gurgaon and Faridabad figure on these lists so frequently that it does not come as a surprise anymore. The government, aware of the risks this poses to citizens' health, has set ambitious targets for electrification of cars, two-wheelers, trucks, buses and pretty much anything that runs on wheels. Apart from improving air quality, this will also help it reduce the high dependence on crude oil imports. Every year, India imports more than 80 per cent of its crude oil requirement (220 million tonnes in 2017/18). The crude oil import bill of $88 billion in 2017/18 accounted for a quarter of all our imports. Almost 40 per cent of this is used by the transport industry. According to the International Energy Agency, India's demand for oil is projected to more than double to 458 million tonnes by 2040. To avoid the potential damage to its fiscal calculations that this may cause if oil prices rise, India has set a target of reducing oil imports by 10 per cent by 2022. This is where electric vehicles step in. According to a report by the Niti Aayog and Rocky Mountain Institute, a reduction of

THE CASE FOR AN ALL ELECTRIC FUTURE

$330 BILLION
Savings on oil imports if India goes full electric by 2030

1 GIGA TONNE
Potential carbon dioxide emission reduction

156 million tonnes of oil equivalent worth ₹3.9 lakh crore is possible if by 2030 electric vehicles account for 40 per cent of two-wheelers, cars and SUVs and 100 per cent commercial vehicles and three-wheelers.

"Import of oil and the resultant outgo of foreign exchange have been major problems for all governments in India. A shift towards electric vehicles can dramatically alter that," says Tarun Mehta, CEO and co-founder, Ather Energy. "Either as incremental volumes or as replacement vehicles, the more the number of e-vehicles that hit the roads, the more will be the reduction in our import bill."

THE IMPACT

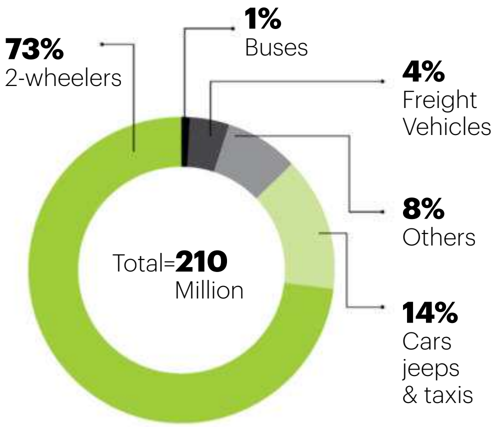
The impact on environment would be less intangible but probably more significant. At two million kilotons, India is the third-largest emitter of carbon dioxide after China and the US. Cities in northern parts of the country that are land locked and so don't receive coastal winds are some of the most polluted in the world. In Delhi, for instance, pollution due to particulate matter regularly exceeds the WHO limits by a factor of 7-12. Vehicular emissions are considered to be one of the major contributors to poor ambient air conditions. According to an IIT Kanpur report — Source Apportionment Study of PM 2.5 and PM 10 emissions — in Delhi, vehicles account for an average of 25 per cent PM 2.5 emissions, going up to 36 per cent in winters. Pollution due to suspended particulate matter from vehicles is even higher at 40 per cent. With no tail pipe emissions, electric vehicles can drastically alter the scenario. As per a study done by the United Nations Environment Program and IIM Ahmedabad in November 2014, in a low carbon scenario where EV penetration is the highest, PM 2.5 emissions will fall below half the current levels by 2035.

All this, however, would come to naught if electricity to power these vehicles is produced by damaging the environment. In India, 65 per cent of electricity produced is thermal. Of this, an estimated 57 per cent is from coal, considered the most polluting. Charging cars with electricity produced by coal-based power plants may negate the benefits of zero tail pipe emissions. Some even say it will be more polluting than using Euro VI conventional petrol or diesel engines.

"If the source of electricity that powers the car is not clean, does it really matter if there are no tail pipe emissions?," says Roland Folger, Managing Director and CEO, Mercedes Benz India.

The answer to this could lie in the push towards renewable energy. The government has set an ambitious target of generating 175 gigawatt (GW) power through renewable energy sources such as solar and wind by 2022. The current renewable capacity is 58 GW. The dependence on coal-based power may not go away in a hurry — 50 GW fresh coal-based capacity is also under construction — but given the thrust on renewable power, a future where electric cars run on electricity produced without polluting the environment may not be that implausible.

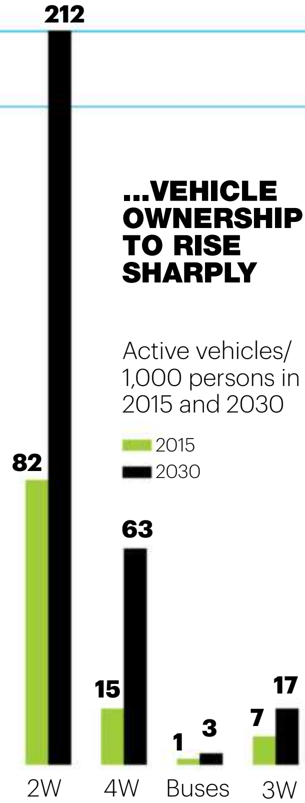
TWO-WHEELERS DOMINATE ROADS...



Source : Indiastat.com

...VEHICLE OWNERSHIP TO RISE SHARPLY

Active vehicles/ 1,000 persons in 2015 and 2030



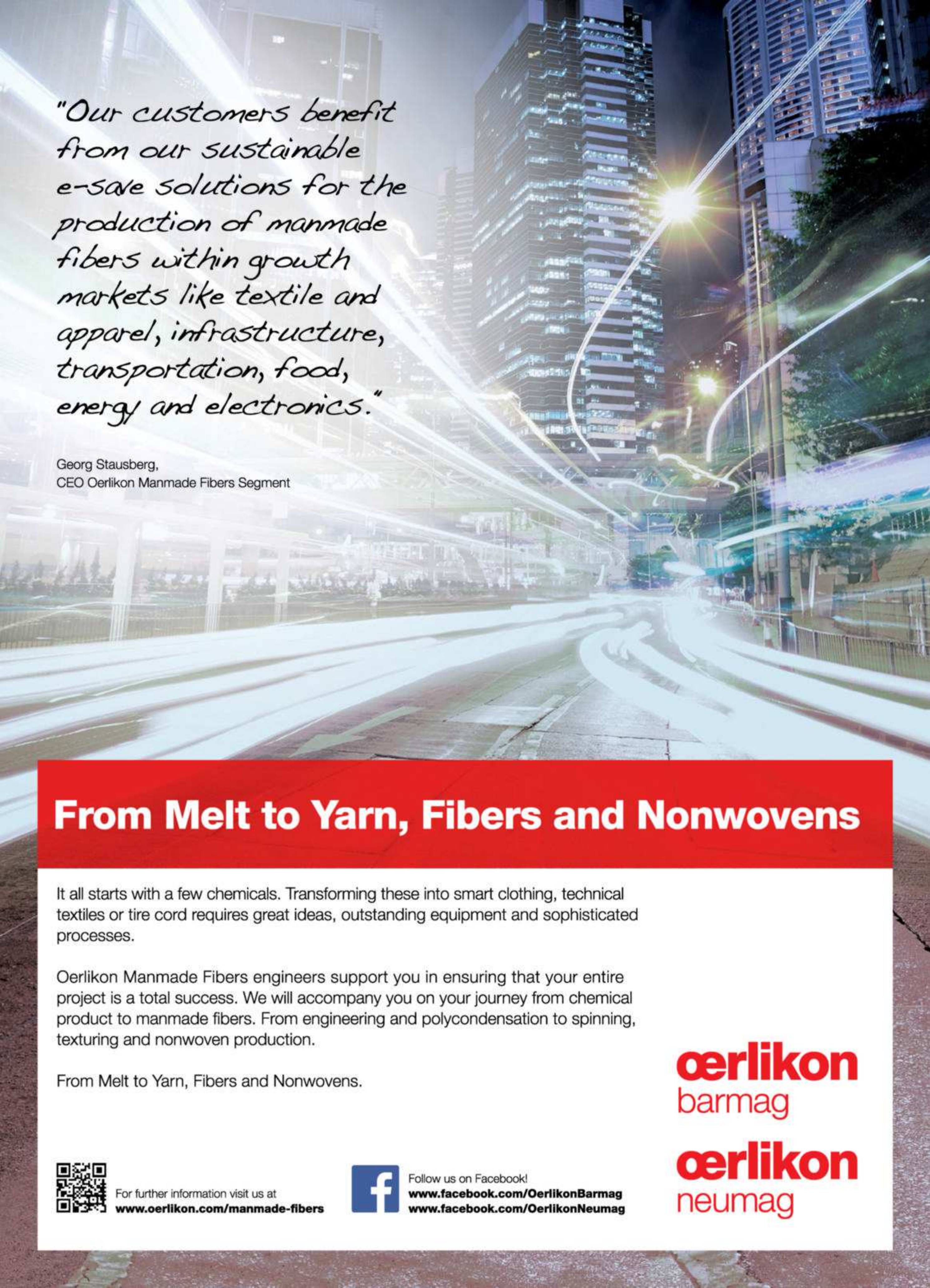
THE STUMBLING BLOCKS

222
Estimated number of charging stations in India.

60,000
Number of petrol pumps in the country.

65%
Share of thermal power in India's overall electricity generation. Coal accounts for 57% of that. If this doesn't change, it will defeat the whole purpose of introducing EVs.

No estimate yet on how many and what type of charging stations would be needed if all vehicles go electric.


"Our customers benefit from our sustainable e-save solutions for the production of manmade fibers within growth markets like textile and apparel, infrastructure, transportation, food, energy and electronics."
Georg Stausberg,
CEO Oerlikon Manmade Fibers Segment
From Melt to Yarn, Fibers and Nonwovens
It all starts with a few chemicals. Transforming these into smart clothing, technical textiles or tire cord requires great ideas, outstanding equipment and sophisticated processes.
Oerlikon Manmade Fibers engineers support you in ensuring that your entire project is a total success. We will accompany you on your journey from chemical product to manmade fibers. From engineering and polycondensation to spinning, texturing and nonwoven production.
From Melt to Yarn, Fibers and Nonwovens.
For further information visit us at
www.oerlikon.com/manmade-fibers
Follow us on Facebook!
www.facebook.com/OerlikonBarmag
www.facebook.com/OerlikonNeumag
œrlikon barmag
œrlikon neumag


Tech ke Deewano kiliye
INDIA TODAY GROUP
TECH
तक
Watch Now
TechTak.in
Gives you the edge and information you need on technology
TechTak.in is a dedicated mobile channel of MOBILE तक a portfolio of niche digital channels

PROJECTED EV DEMAND IN INDIA

Segment	Technology	Year 2020	Year 2025	Year 2030
Two-wheelers	Non EV	1,04,09,000	92,60,000	0
	EV	**73,52,000**	**1,40,35,000**	**2,65,14,000**
Autorickshaws	Non EV	6,16,000	0	0
	EV	**6,46,000**	**23,64,000**	**40,72,000**
Cars and SUVs	Non EV	35,38,000	39,32,000	0
	EV	**26,000**	**15,92,000**	**1,59,11,000**
Total	Non EV	1,45,63,000	1,31,92,000	0
	EV	**80,24,000**	**1,79,91,000**	**4,64,97,000**

Source : Niti Aayog and Rocky Mountain Institute

There are other challenges too such as inadequate charging infrastructure. There are only about 200 charging stations in the country today compared with over 60,000 fossil fuel stations. So, 100 per cent EV penetration by 2030, initially targeted by the government, reads like a fairytale. Yet, the wheel is turning.

New Delhi-based Energy Efficiency Services Ltd, a joint venture of four power PSUs — NTPC, REC, PFC and Powergrid — last year came out with a 10,000-unit tender for electric cars for bureaucrats. In the first phase, it procured 500 cars, e-Tigor and e-Verito, from Tata Motors and M&M, respectively. Earlier this year, it announced another tender of the same size. Though it is behind schedule by almost a year, the automobile companies are not sitting idle. Tata Motors and Mahindra recently signed MoUs with the government of Maharashtra to deploy 1,000 electric vehicles — cars, SUVs and CVs — in the state. These are small numbers but it is a start. Others, such as market leader Maruti that has tied up with Toyota, Hyundai, Ford and Honda, have also drawn up plans to introduce electric versions of their cars.

In charging also, the private sector is taking the lead. EV start-up Ather Energy, which is primarily working on launching a range of electric scooters, is setting up a chain of charging points in Bangalore. It aims to set up at least 60 of them by the end of this year so that a charging point is available to any city consumer within a four-kilometre radius.

Similarly, Chetan Maini, who launched India's first electric car, Reva, back in the 90s, has launched the country's first swappable battery platform for electric two- and three-wheelers. It comprises modular smart batteries that are intelligent enough to customise themselves according to each vehicle type and versatile enough to be used in combinations.

At some point in time, things will come together and EVs will proliferate. The bigger challenge then would be to make national electric grid adapt to the new reality. A few months ago, half a dozen electric cabs being tried out by an established taxi aggregator in Nagpur were put on charge simultaneously. This led to collapse of the electric grid and raised questions on whether the grid is flexible enough for peak power output when tens and thousands if not millions of electric vehicles are charged simultaneously around the country?

"EVs could add up to 50 per cent to peak demand and 3 percentage points to peak demand growth between 2017 and 2030. The key challenge for the grid with EVs will, therefore, not be aggregate electricity units but rather 'when' and 'where' the demand is generated," says a report by independent research firm Brookings India. "Issues of supply capacity being concentrated at local distribution transformer or even substation level with significant EV population will have to be looked at before any large-scale roll out. EVs are unlike any other conventional load that the grid has been used to. Their disproportionately large impact on peak demand compared to electricity units requires significant peaking and distribution capacity head-room that risks severe underutilisation and, therefore, unviability."

The normal grid loads have an annual aggregate load capacity to effective capacity used factor of nearly five; for EVs, the report says, this can vary between 80 and 160. Total electricity demand for EVs may, therefore, vary between 37 and 97 Terra Watt hours under 33 per cent and 100 per cent penetration, respectively, by 2030. EV deployment under both scenarios will bring volatility to instantaneous demand. If the grid cannot support it, it will be a repeat of Nagpur across the country, many times over.

On paper, nothing is cleaner than an electric car. But the promise of pure air will be a false dawn if the grid is not ready or electricity not clean enough. BT

@sumantbanerji

Sun Burnt

Indian solar equipment makers are being squeezed out of the market by global players.

By Anilesh S. Mahajan

The Dhirubhai Ambani Solar Park near Pokhran, Rajasthan

Hulas Rahul Gupta is battling for survival. The Managing Director of IndoSolar, the country's largest manufacturer of solar cells, has been forced to down shutters at his factory in Greater Noida. He had no choice after his order book dried up. Gupta now spends his days in meetings to convince bankers that he can revive his business. And, when he's not doing that, he is meeting people in power to push for restricting rival Chinese firms from dumping their cheaper products into India. India's solar energy sector is being buffeted by winds of change, some good and some really bad. The government, on its part, has been announcing new policies that are sure to benefit new players in the field but existing players, especially manufacturers, assert they've been given a raw deal. IndoSolar, for instance, lost ₹58 crore in the last fiscal and that's after previous losses to the tune of ₹141 crore.

Policy changes that affected manufacturers adversely were not restricted to just Indian government decisions. China recently hit the brakes on its solar programme, halting quota allocations for new projects and announcing tariff reductions of as much as 9 per cent on electricity generated from clean energy. That could lead to a further fall in solar panel prices globally, which will impact Indian panel manufacturers.

"My bankers are knocking at the door. If the government doesn't bring safeguards and a favourable manufacturing policy, we will vanish," says Gupta. He

PHOTOGRAPH BY VIVAN MEHRA

35% of **Chinese solar equipment is** coming to India

Solar tariff crashed from **₹12.16 a unit in 2010 to ₹2.47 a unit,** largely because panel prices fell from $1.8 a watt to 25 cents a watt

Solar is 22 GW of 69 GW installed renewable capacity asserts that Indian domestic manufacturers have been left out of the party, though the sector (solar energy) remains quite dynamic; installed capacity zoomed over eightfold from 2.63 GW in 2014/15 to 21.65 GW by the end of 2017/180; at least 70 GW will be tendered in the next few years.

Gupta isn't the only one who has been hurt by incentives that exclude existing domestic players. Kolkata-based cell manufacturer, Jupiter Solar Power Ltd, has been struggling to avoid having to shut operations since last July. Moser Baer, among the largest manufacturers of panels, sought restructuring to the tune of ₹956 crore in 2012/13, but the recast failed a few years later.

India's manufacturing capacity utilisation is dismal. Only about 10 per cent of the potential 3.1 GW solar cell manufacturing capacity is used; similarly, only a quarter of the solar panel manufacturing capacity is utilised.

RAISING THE WALL

In June 2014, the Minister for New and Renewable Energy, Piyush Goyal, met domestic manufacturers. He wanted them to withdraw their petition asking for hefty anti-dumping duty on Chinese imports in the solar sector. The manufacturers did so believing the government would increase the size of the pie and they would fare better. Four years down the line, says Gupta, nothing has changed.

In January, India pushed interim safeguard duty of 70 per cent but this was later challenged by Shapoorji Pallonji group in the Madras High Court. Now, the stay is vacated and India is moving towards a final duty. Indian Solar Manufacturers Association (ISMA) feels that domestic players have lost out in the past four months. They are preparing for filing a fresh petition seeking anti-dumping duties as well.

Despite starting manufacturing solar cells and panels in 2010, the domestic industry was for years largely dependent on government-backed projects that mandated local sourcing. Two years later, the government allowed imports; and in 2014/15, when the government insisted on reverse bidding for solar parks, domestic players were edged out by the Chinese who aggressively offered everything much cheaper. When the last fiscal ended, domestic manufacturers' share in the Indian solar market had shrunk from 13 per cent to a mere 7 per cent. When the EU and then the US created tariff barriers, India became the natural choice for aggressive bidders for solar parks.

Close on the heels of the EU imposing steep import tariffs and restrictions on Chinese solar products, the US initiated its own trade war with the Chinese. The result is that the EU and the US, whose purchases jointly accounted for 32 per cent of China's solar market, now account for just 5 per cent. On the other hand, India, which earlier bought only 3 per cent Chinese production, now accounts for nearly 35 per cent. Chinese cells are nearly 25 per cent cheaper. Moreover, China, with its massive capacity, is pushing modules, which are much cheaper. The trade war also resulted in a market disruption and a sharp drop in solar power price. In May last year, a Rajasthan bid touched ₹2.47 per unit, effectively meaning solar power prices were on par with coal.

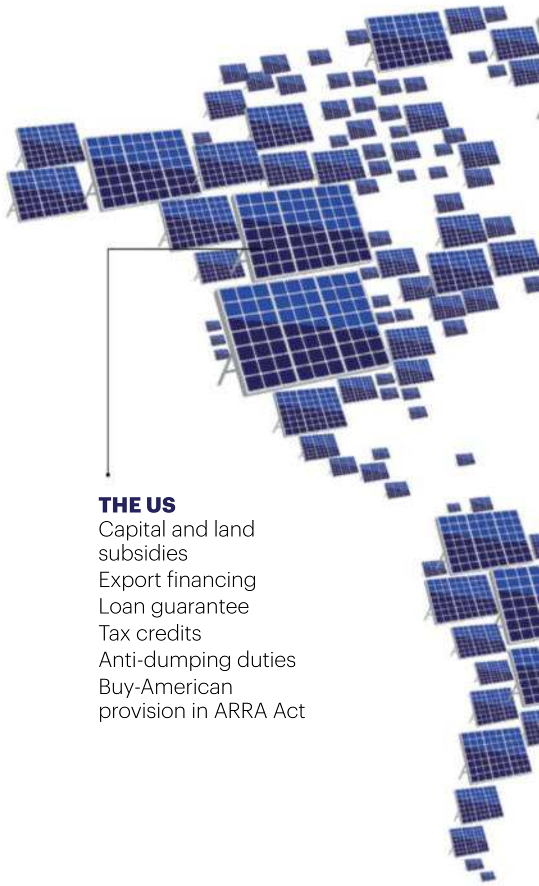
With panel prices dropping from $1.8 per watt in 2010 to lower than 20 cents per watt, in the past four years, India imported nearly 16 GW of panels from China. And worsening the situation for Gupta and other domestic manufacturers is the fact that most domestic panel manufacturers also rely on cheap imported wafers and cells from China and Taiwan.

Several operators refusing to be named told *BT* that they are willing to support Indian manufacturers if they can be assured of volumes. On June 8, the government made cell and panel manufacturers sit together to find an amicable solution but the effort didn't yield results. In the next two years, India will tender nearly 100 GW of solar generation capacity to meet targets. That's a challenge because India's manufacturing capacity is uncompetitive. Reason: a) none of the existing players can fund the drastic necessary expansion and upgrades, b) manufacturing is capital intensive, requiring not just subsidies but also cheaper electricity, cheaper funds and, obviously, scale c) there are no backward linkages and hardly any capacity to manufacture components such

100GW
Capacity for which India will issue tenders in the next few years

INDIA VS THE WORLD

A look at where India stands in terms of subsidies offered



5%
Share of Chinese solar equipment bought by the EU and the US

INDIA

No benefit of capital subsidies so far

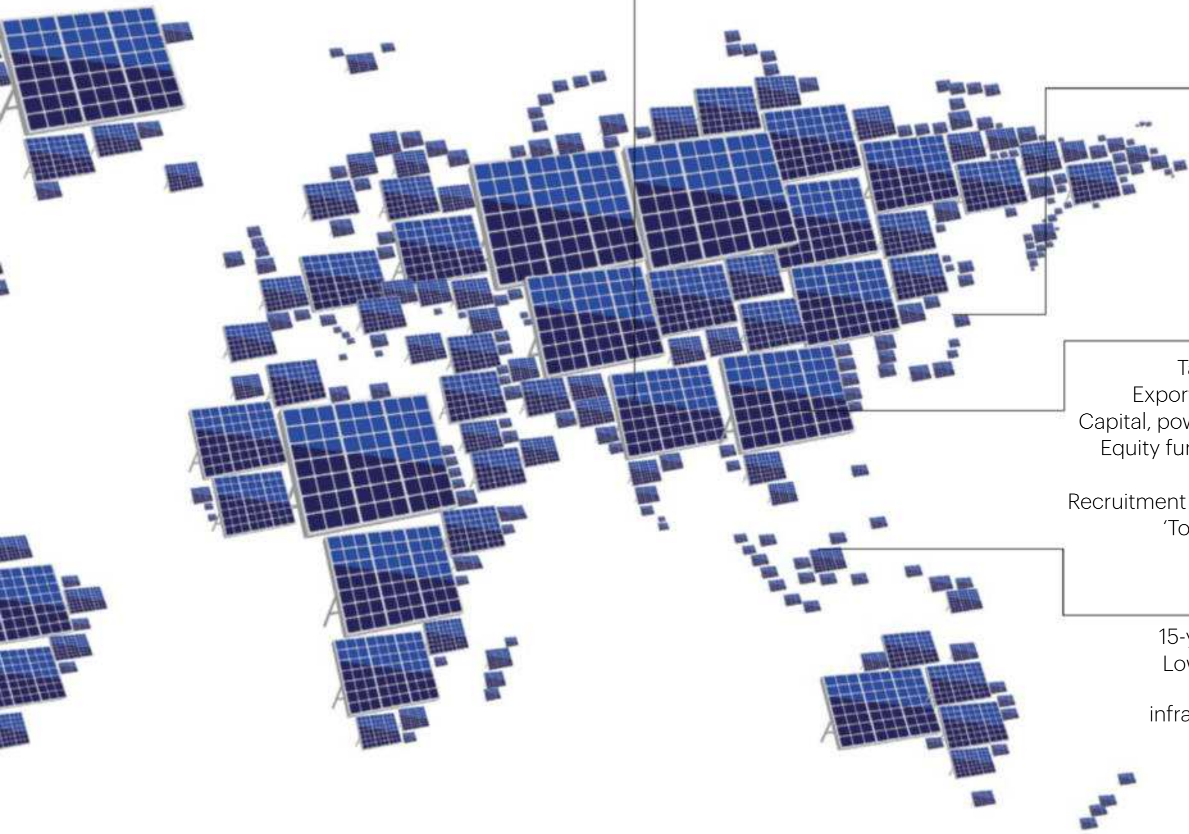
Domestic content requirement (DCR) programme (struck down at WTO)

Reworked DCR plan, with 10GW public procurement of solar energy to support domestic players

IN THE WORKS

Petition for anti-dumping duties, anti-circumvention duties and safeguard pending at DG Anti-Dumping, Ministry of Commerce

DIPP and MNRE fine-tuning plan on solar manufacturing policy



TAIWAN
Low interest loans
Capital subsidies
Well developed industrial cluster
R&D incentives
Low tax rates

CHINA
Tax and VAT exemption
Export finance & credit lines
Capital, power and land subsidies
Equity funding & R&D subsidies
Anti-dumping duties
Recruitment and training subsidies
'Top Runner' Programme

MALAYSIA
15-year tax holiday
Low interest loans
High-tech infrastructure parks

as wafers, ingots, poly-silicon and glass. The US and EU, along with China, ran intense capacity building programmes and now hardly have space for imports.

India's solar manufacturing policy is still only a work in progress. And in the meantime, last June, the Finance Ministry refused to pay a ₹20,000 crore capital-subsidy portion citing funds crunch. Minister for New and Renewable Energy, R.K. Singh, however, told *BT* that the government was committed to helping domestic manufacturers grow. This, he said, could take the shape of "increased domestic manufacturing link projects and updated manufacturing policy".

NOT GOOD ENOUGH

Just days after Singh spoke to BT, the Solar Energy Corporation of India announced a plan in which it invited panel 'manufacturing bids for 5 GW capacity and generation of double' – meaning an entity can bid to manufacture 5 GW and bid for 10 GW worth of generation units as well. But this is insufficient, say current players.

The bid document requires two bank guarantees of ₹400 crore for generation projects and ₹200 crore for manufacturing projects. The CEO of Jupiter Solar Power Ltd, Dhruv Sharma, asks, "How can you expect existing players battling debt to get bank guarantees for these amounts?"

Even as existing players feel they have been hung out to dry, government representatives say the new policy aims to accelerate manufacturing by offering new manufacturing link projects. This, they contend, will open doors for larger players like the Adani Group (with units in Gujarat) and Tata Power. Investments could also be coming in solar equipment manufacturing with the Softbank Corp-GCL tie-up.

The challenge of access to cheaper funds and capital subsidies, however, still looms large on the solar horizon. **BT**

@anileshmahajan

Cleaner Diesel Ahead

INDIA WILL NEED A BOUQUET OF TECHNOLOGIES AND FUEL DIVERSITY TO MAKE GROWTH SUSTAINABLE.

BY C.V. RAMAN

India's automotive industry is the poster boy of 'Make in India'. But growth has to be balanced with national priorities such as energy security and emission control. So, the country will need a bouquet of technologies and fuel diversity to make growth sustainable.

Diesel, Then And Now

Delhi Gasps, screamed a newspaper headline in November 2015. That year, air quality deteriorated to a level no one had ever seen before. Matters landed in court, similar to what had happened in 1998-99, and diesel fell prey. Actions taken included stopping registration of diesel passenger vehicles above 2,000cc and limiting the life of diesel cars in the National Capital Region to 10 years.

What might have been relevant in 1999 was also considered relevant in 2015. However, a number of new-technology diesel engines were introduced between 2001 and 2015, especially in the passenger car segment. Today, all cars are equipped with common rail diesel technology and relevant exhaust aftertreatment systems. Reductions in vehicular emissions from the 1999 levels stand at 84 per cent for CO_2, 77 per cent for No_x and 86 per cent for particulate matter (PM). An IIT-Kanpur study conducted in Delhi also showed passenger cars contributed only 2 per cent of the overall PM pollution load. It was natural that the odd-even experiments in Delhi did not yield any benefit.

Cleaner Diesel In 2020

The auto industry, the oil industry and the government have decided that the 2020 target of meeting BSVI norms is to be achieved, leading to leapfrogging technology and regulations. With BSVI, PM emissions from new diesel vehicles featuring robust aftertreatment technologies such as diesel particulate filters will be near zero. In fact, emissions will be similar to petrol vehicles. Reductions from the 1999 levels will be nearly 97 per cent for PM and 93 per cent for NO_x.

Will diesel face the stigma in spite of improvement? The controversy surrounding the Dieselgate in Europe and the US has not helped its case, but this outright dismissal is not entirely rational from an engineering point of view. With road transportation in Europe being the largest contributor to NO_x, Dieselgate was more relevant to Europe. As the Euro VI technology has been adopted by the region to deal with higher NO_x levels, India can learn from Europe when

65%
of petrol is used by two-wheelers and 20-25 per cent of diesel is used by cars, say studies

it adopts BSVI in 2020. As far as technology goes, diesel engines will help control CO_2 emissions as it is more fuel-efficient than petrol – every litre of diesel gives 15 per cent more energy compared to petrol. However, the noise around diesel vehicles and the reduction of useful life to 10 years have seen diesel penetration come down from 50 to 34 per cent in passenger vehicles. Is it good for India?

Energy Security And Lower CO_2

Nearly 65 per cent of petrol is used by two-wheelers while 20-25 per cent of diesel is used by cars as per published studies. A back-of-the-envelope calculation shows if all diesel cars shift to petrol, its consumption will rise by 14 per cent, which is not in line with reducing crude oil imports or CO_2 emissions.

A recent ICCT study compared the CO_2 fleet averages of new vehicles in various countries. India (123g/km) is a shade behind Europe (120g/km) but much ahead of developed countries like Japan (136g/km), the US, South Korea and China. Besides a large portfolio of small fuel-efficient vehicles, three million CNG vehicles and a healthy penetration of diesel engines have helped to pull it off.

The Future

Japan is now giving incentives for purchasing diesel vehicles to reduce CO_2 emissions. Paradoxically, India is adopting a fuel-neutral emission norm in 2020 but diesel is still struggling under regulatory and financial burden. With BSVI, prices of diesel vehicles will rise. But then, newer diesel engines will comply with more stringent targets. Will consumers pay even more for a cleaner diesel engine? If market forces are allowed to function, diesel will continue to have its supporters. BT

The writer is Senior Executive Director (Engineering), Maruti Suzuki India

Green Tech powering sustainable development at JK Paper

Today, it has become imperative to think about the ecology and surroundings we inhabit. I strongly believe businesses have a significant role to play in sustainable development by doing their part in mitigating climate change issues. Paper Industry's actions are shaping government's policy focus, most of which are done voluntarily. Industry action is essentially on 3 key fronts- increasing use of renewables, reducing energy intensity of business and achieving water efficiency. Contextually, these aspects are illustrated with some achievements realized at JK Paper. Firstly, our unit JKPM has a very efficient High-Pressure Recovery Boiler for burning black liquor helping reduce fossil fuel(coal) consumption by 66% in the last 4 years (56% total energy needs met by renewable sources).

Secondly, efforts to reduce energy intensity of business has manifested into explicit parameters, such as specific energy consumption(SEC) (reduction of 43% in last 4 years). And finally, emphasis on water efficiency(specific water consumption reduced by 50% in last 4 years at unit JKPM, lowest in the industry).

Unit JKPM is the first paper mill in India to install Methanol recovery system to mitigate smell of SOG (stripped-off gas) & CNCG (concentrated non-condensable gas) from evaporators. Also, we are the first mill in India with centralized refining system for multiple Paper machines for energy savings (two common refiners substituting six for three machines).

It is imperative to continuously adopt new technologies, innovate processes, recycle, reuse and minimize waste water discharge to help protect the environment.

Paper industry is capital intensive and requires substantial investments for expansion, modernization and up-gradation of technologies to attain better operating levels and competitiveness. Low profit margins and financial status of the industry make it difficult to sustain investment requirements. With this in mind, a focused Technology Modernization Scheme(TMS) aimed towards Green Technology may be considered, to act as a catalyst for modernization efforts within the industry, focus on up-gradation of technology to reduce pollution, conserve resources and improve efficiencies. It may also encourage the development of new technologies/ demonstration projects for improving energy efficiency and quality of treated effluents. Industry may utilize funds sourced from TMS for:

- Acquisition of proven technology (foreign/indigenous origin)
- Acquisition/license of patent rights
- Acquisition of capital goods for transfer of process technology
- Contractual R&D activities for technology upgrade

To sum up, I would like to emphasise that few industries can match the sustainability that paper industry offers. It is fully biodegradable and doesn't cause any major impact on the environment. Moreover, it is made from resources which are renewable and can be easily regenerated.

HARSH PATI SINGHANIA
Vice Chairman & Managing Director
JK Paper Ltd.

WHY BIOFUELS?

Biofuels, unlike fossil fuels, are cleaner, greener and cheaper

Converting agricultural residue to biofuels will reduce crop burning and greenhouse emissions

Policy expands the scope of raw material for ethanol production

Ethanol can be made from feedstock, including sugarcane, sweet sorghum, sugar beet and starch-containing materials such as corn, cassava, and damaged grains

Biofuel policy will improve farmers' income

Nature's Fuel

With the Cabinet approving the National Policy on Biofuels, there is renewed hope for a cleaner environment in the not-too-distant future.

By Anupama Airy

T**HE UNION CABINET'S** approval to the National Policy on Biofuels earlier last month triggered both hope and hesitation. While the industry eagerly awaits the implementation of this policy, it is also cautious, considering our history with biofuels. What does this new policy mean for India and its economy, and have we learnt from the mistakes of our past?

Biofuels, unlike fossil fuels, are a much cleaner, greener and cheaper fuel produced using biomass or biowaste. In this day and age when air quality is highly questionable and global warming most definite, biofuels are our rescue wagon. While it burns similar to a fossil fuel, contextualising it with our current scenario – a substantial switch from crude oil to biofuels – will largely reduce the emission of greenhouse gases and control air pollution especially in the way it is produced and harnessed.

Thus, the National Policy on Biofuels was a long time coming. If looked at carefully, two major points in the new policy stand out. The first is the aim of the policy to expand the scope of raw materials used towards the generation of biofuels, while the second is the accompanying Viability Gap Funding (VGF) scheme.

₹4,000 CRORE
forex savings estimated by the policy due to increased production of ethanol

CASTING A WIDER NET

Talking about the 'scope of raw materials', the policy looks to allow the use of sugarcane juice, sugar containing material, starch containing material and, most importantly, damaged crop like wheat, broken rice and rotten potatoes, which have been deemed unsuitable for human consumption, for ethanol production. Ethanol is the most common biofuel worldwide.

India's first Biofuel Policy (of 2009) was largely dependent on a region-based crop – jatropha – and various misconceptions about the crop itself. This put us at a huge disadvantage, because after an initial boom, the crop went totally bust. In contrast, the current policy states that ethanol can be made from a variety of feedstock such as sugarcane, sweet sorghum, sugar beet, and starch containing materials such as corn, cassava and damaged grains. Although the current policy aims to expand the raw material scope by making sugar the main feedstock, and hence reducing the cost of production, its dependence on sugar and agriculture could be a cause for concern. In the past, we have relied largely on sugar industries for ethanol. More often than not, sugar industries give this by-product of ethane to users who pay the most – alcohol companies. Thus, while oil companies are adequate bidders, the price just doesn't seem right to sugar factories.

This is where the second most important aspect of the policy surfaces – the VGF scheme that aims to provide financial and fiscal incentives specific to a biofuel type. The policy has categorised biofuels as first generation (1G), second generation (2G) and third generation (3G) fuels. The 1G category of biofuels includes bioethanol and biodiesel; 2G comprises ethanol and municipal solid waste; and 3G includes bio-compressed natural gas (CNG). The policy provides for a VGF scheme for 2G ethanol bio-refineries of ₹5,000 crore in six years, in addition to additional tax incentives and higher purchase price as compared to 1G biofuels.

EFFECT OF RISING FUEL BILL

India imports 80% of its oil needs and spent $87.7 billion on crude import in 2017/18

With oil prices on the rise, the import bill could bloat, hurting the economy

Biofuels can reduce India's dependence on oil imports

European nations are generating methane from sewage to make bio-CNG for buses

India can save by running public transport on biofuels

THE CHALLENGES AHEAD

Biofuel's growth hampered by India's heavy dependence on farm sector

Indian farm sector is disorganised; so, collection of biomass is difficult

No clear business case for developing efficient logistical chain for biomass

Lack of proper mechanism for separation and segregation of municipal waste

Another positive of ensuring a healthy flow of biofuel is energy independence. At present, India's crude oil imports are soaring and the direct impact is felt in the ongoing fluctuations of petrol and diesel prices. Blending these with biofuel and adequate pricing will greatly ease the pressure exerted by these imports. The policy estimates a supply of around 150 crore litres of ethanol, resulting in savings of over ₹4,000 crore of forex.

Nitin Gadkari, Road Transport & Highways and Shipping Minister, says, "Biofuels are cost-effective and environment-friendly substitutes to conventional fuels. They will bring down pollution and can be produced indigenously from agricultural waste, plants like bamboo, non-edible oil seeds or municipal waste, besides reducing country's huge import burden."

Since the policy is also largely dependent on agriculture, it mentions efforts to provide farmers an appropriate price for their produce; the policy allows use of surplus food grains for production of ethanol for blending with petrol with the approval of the National Biofuel Coordination Committee. Taking charge of the agricultural sector is key. It is often the unorganised agricultural sector that has been an impediment in India's developing biofuel sector.

Biofuels will be a big relief from the deteriorating air quality in major cities. The Biofuel Policy states that one crore litres of ethanol saves around 20,000 tonnes of CO2 emissions. In 2017/18, there will be lesser emissions of CO2, to the tune of 30 lakh tonnes. Conversion of agricultural residue to biofuels will help reduce crop burning, which will further reduce greenhouse emissions. The policy also calls for efficiently utilising municipal solid waste (MSW) for harnessing ethanol – it talks of technologies available to convert 62 MMT of annual MSW generated in India. One ton of such waste has the potential of providing around 20 per cent drop in fuels. On their part, industry players believe that biomass power production is crucial for the country when it's staring at piling municipal and agricultural

PHOTOGRAPH BY DANESH JASSAWALA

PHOTOGRAPH BY RAJWANT RAWAT

BIOFUELS WILL **IMPROVE ENERGY SECURITY**, CREATE JOBS, FOSTER ECONOMIC GROWTH AND SUPPORT FARMERS

DHARMENDRA PRADHAN
PETROLEUM AND NATURAL GAS MINISTER

BIOFUELS WILL BRING DOWN POLLUTION, BESIDES **REDUCING THE COUNTRY'S HUGE IMPORT BURDEN**

NITIN GADKARI
ROAD TRANSPORT & HIGHWAYS AND SHIPPING MINISTER

waste across India.

Aditya Handa, MD and CEO, Abellon CleanEnergy, says the policy, for the first time, provides a viable framework for the bioenergy sector in India. "India produces a substantial amount of municipal waste and agricultural residue. There is a growing consensus among industry players and policymakers to look for ways to efficiently dispose the waste and create value out of them. However, such projects/plants need infrastructure for large-scale and environmentally safe processing of waste. Often, waste management companies willing to undertake projects/infrastructure development are faced with unrealistic expectations and financial uncertainties. With the National Biofuel Policy, the government has essentially given impetus for more investment from the private players in the sector," Handa says.

GLOBAL LESSONS

Efficient utilisation of municipal solid waste comes with its own hurdles. Due to the absence of a proper mechanism for separation and segregation of this waste, the production of biofuels from municipal wastes has not been very successful in the past. Thus, one wonders how a developing nation like India will be able to harness biofuels to the advantage of its environment and economy.

Some countries serve as excellent examples. While the US produces the largest amount of ethanol – as much as 40 billion litres using corn and wheat – it is the example of Brazil that most accurately resonates with India. Brazil produces 25 billion litres of ethanol – second highest in the world – using sugar cane just like India. But India manages to produce only one billion litres with a similar feedstock of sugar cane and molasses. Brazil has a vast and well-organised agriculture sector; along with that, it invests heavily in its mills and provides impetus for technological advancement in this sector. Not just that, Brazil ensures a proper collection and transportation infrastructure for biomass, which, in turn, ensures uninterrupted supply.

"Promoting biofuels will improve India's energy security, create jobs and foster economic growth, besides supporting farmers," said Union Petroleum and Natural Gas Minister, Dharmendra Pradhan, announcing the policy.

What reads ideal on paper seems over-ambitious in reality. While the official statement claims the policy is in line with various government initiatives such as Make in India, Swachh Bharat Abhiyan and Skill Development, and offers great opportunity to integrate with the ambitious targets of doubling of farmer incomes, import reduction, employment generation, waste to wealth creation, the financial and technological advancement and limitations of our nation have to be considered.

The biofuel generation, through this policy's free hand on raw material, will receive a major boost, but we may not be able to tap into the full potential of these new avenues until we generate infrastructure that will have direct bearing on supply to consumers. **BT**

The writer is a Delhi-based freelance journalist

Losing The War

THE USES OF PLASTIC ARE MANIFOLD, BUT AS IT IS ALMOST INDESTRUCTIBLE, IT IS TIME TO FIND WAYS TO GET RID OF IT.

BY PROSENJIT DATTA

300
MILLION TONNES
Approximate annual production of plastic across the globe

26,000
TONNES
Plastic waste generated by India every day

1.6
MILLION SQ. KM
Size of the Great Pacific Garbage Patch, made of plastic, which is more than twice the size of France

THE TERM PLASTICS came to be used only around 1925, but what we call plastic today was invented either in 1839, 1862 or 1909, depending on how you to choose to define it. In 1839, German chemist Eduard Simon discovered polystyrene when he isolated it from natural resin. However, it was in 1922 that another organic chemist, Hermann Staudinger, realised what Simon had discovered was a long chain polymer. Staudinger would go on to win a Noble Prize for his work on polymers while polystyrene would find its use in synthetic tyres and Styrofoam (yes, the same stuff you get your coffee in).

Many chemists consider English inventor Alexander Parkes to have invented the first real plastic compound, which he named Parkesine. He was experimenting on rubber, and he combined various components to come up with the new compound. However, Parkesine was not very stable, and it did not find too many applications, and by all accounts, it did not prove to be a commercial success, though it was soon followed by other materials that took their inspiration from it.

The first all-synthetic plastic is generally credited to Leo H. Baekeland, a Belgian-American inventor, who invented Bakelite for electrical insulation. Unlike the variety of plastics that preceded it, Bakelite had no natural molecules, and it is deemed as the first, true modern plastic.

Plastic started to gain popularity for all sorts of applications post World War II because it has two great qualities. One, as the name suggests, it can be moulded into any shape (the word is apparently derived from Latin *plasticus* or Greek *plastikos*, both of which mean 'able to be moulded'). It can be moulded to produce bags, combs, toothbrushes, electric wire insulation, straws and cups, buckets, pipes, water bottles and almost anything. It can also be used for building roads.

The other great property is that it is pretty much indestructible. More indestructible than any superhero from Marvel or DC universe. Any plastic that was ever made will stay on for hundreds of years unless it is recycled. Over a few centuries, it may degrade, breaking up into component parts, but even then, the synthetic molecules will keep floating around. Essentially, no one has figured out a way of destroying plastic except for recycling or incinerating it, which is not much of a solution, given that it will create a huge emission problem.

The world produces roughly 300 million tonnes of plastic every year, but only about 10 per cent gets recycled. So far, it is estimated that we have produced about nine billion tonnes or more of plastic.

Anything that does not get recycled gets dumped in landfills or in the rivers and oceans, where it stays forever.

In 1997, Captain Charles Moore, who was commanding the research vehicle Aguita, discovered the Great Pacific Garbage Patch – a huge dump of plastic floating in the ocean. Recent research suggests that the patch contains at least 79,000 tonnes of plastic in an area of 1.6 million sq. km, which is more than twice the size of France. And there was no way to clean it up.

Marine scientists have also estimated that every year, about 1,00,000 marine animals die after ingesting plastic that has found its way to the seas and the oceans (there is no estimate as to how many land animals choke and die on plastic although the number could be bigger). Every year, a number of dead whales wash up on shore because of the plastic they have swallowed.

For India, which is hosting the World Environment Day, plastic is probably a worse problem than it is in the developed world. It is cheap and convenient, and we still have not got over our love affair with single-use plastics (they are used once and thrown away like straws and Styrofoam cups and plastic bags used by vegetable vendors). Developed countries have generally reduced their use of single-use plastics to deal with the growing plastic waste. The other big problem for India is that because of its sheer population, plastic use is only supposed to go up, not down. Currently, it is estimated that India generates about 26,000 tonnes of plastic waste every day.

So, how does one deal with the problem of plastic waste? So far, the focus has been on two areas. One is degradation, which focusses on breaking down plastic waste into monomers or smaller polymers. And there are multiple methods of doing it, from heat degradation to biodegradation (the latter depends on microorganisms to chomp on plastic waste).

Biodegradation is the better option as the plastic waste is broken down by algae, fungi or bacteria and converted into biogas. In most other methods of degradation, the plastic is only broken down into smaller pieces – maybe as small as a few millimetres – but it does not make the problem go away. It just makes it look as if it has gone away although it remains as a pollutant in the air, soil and water.

Although biodegradation is a great solution, all types of plastics are not amenable to this method. More importantly, there is the scale issue. It is a slow process (although new research is focussing on things that can speed it up), and no one has managed to economically build huge plants where all types of plastics can be treated through biodegradation.

The second focus area is creating newer, easily degradable plastics, including those which can degrade in sunlight or will take a much shorter period. Again, this does not make the essential problem go away. The plastic will degrade into small, perhaps invisible pieces, but it will stay on as a pollutant.

What is the solution then? Environmentalists and scientists recommend a combination of efforts. First, a big effort on reducing single-use plastics so that so much of plastic trash is not generated. Then, a lot of efforts for collecting the existing plastic waste and dramatically increasing its recycling. Finally, speeding up the process by biodegradation research and creating alternatives such as bioplastic, which is not synthetic and which degrades into natural compounds if treated in special compost facilities.

The main plastic problem, as scientists are beginning to understand, is that it is one of the few materials where we have been successful in creating new types and uses, but not as successful in figuring out how to destroy them. BT

A BRIEF HISTORY OF PLASTIC

1839
German apothecary **Eduard Simon** isolates polystyrene from natural resin. However, he does not know what to do with it.

1862
Alexander Parkes demonstrates Parkesine at the Great International Exhibition in London. Made from cellulose, it can be moulded into different shapes. But it is not a commercial success.

1865
John Wesley Hyatt develops a way of making a billiard ball from cellulose nitrate in response to a challenge. Till then, billiard balls were made from ivory.

1891
Rayon is developed in France.

1909
A chemist in New York named **Leo Baekeland** creates the first, all-synthetic plastic called **Bakelite** for electrical use. It becomes very popular and designer **Coco Channel** even uses Bakelite to design jewellery.

1920
Polyvinyl chloride (PVC) is invented.

1925
The term **'plastics'** is coined for all such materials made from long-chain polymers.

1930
Scotch Tape is invented by 3M.

1933
ICI chemists discover **polyethylene**.

1938
Teflon is created by **Roy Plunkett**. It would find use in scratchless kitchenware.

1939
Nylon 6.6 is developed by Du Pont.

1948
ABS and Velcro are invented. PVC is now used to make vinyl records.

1949
Tupperware is launched, using low-density polyethylene. Meanwhile, Du Pont uses polyurethane to introduce lycra.

1954
Polystyrene finds use in **Styrofoam**.

P.106 AUGMENTED REALITY TO TAKE WORLD BY STORM

P.114 LEADERSPEAK: ARVIND MEDIRATTA

SMART HOTELS

NO ROOM FOR PRIVACY

As smart hotel rooms promise to offer utmost convenience, privacy will become elusive.

ILLUSTRATION BY NILANJAN DAS

IT IS NOT JUST SMART home products, social media accounts or browsing activities on the web that open up user data to those waiting to harvest it; smart hotel rooms, too, are in the reckoning. All over the world, hotels are trying to keep up with tech innovations that could transform a person's hotel stay. This would also mean creating a ton of rich data on each hotel guest. In a single overnight stay, the sheer amount of data yielded and necessarily retained would be voluminous.

> IF THE RIGHT COMBINATION OF DATA PIECES, INCLUDING A DIGITAL SIGNATURE, IS MISAPPROPRIATED SOMEHOW, THE RESULTS COULD BE DRASTIC.

As a guest walks into a hotel room with a special digital key, practically every object will involve sensors and voice controls. A recent report from CBS News describes the research at a Marriott Hotel in Maryland where rooms are personalised via an intelligent engine. Window shades can instantly be commanded to the desired light or darkness level and the temperature in the room can be adjusted too. TV viewing preferences, consumption from a mini bar, bath water temperature, meal preferences (even if outside of the room) and much more can quite conceivably be recorded. This has already begun in some top hotels. There will be smart mirrors that interact with the guest and, in fact, even the glass in the shower areas can be used for finger-tracing hot-shower ideas and be emailed to the guest. Mirrors and glass surfaces can also display a guest's preferred workout routine.

The scope of truly intimate and personal information possible – how warm must a toilet seat be for this guest, what kind of make-up is being used, what he/ she likes to drink, how hot should the coffee be, etc – is limitless. Information such as these will go on to make subsequent hotel stays even more personalised, meeting a guest's every specific need, but raises serious privacy concerns.

Every company that provides services will, of course, ask for consent and pledge never to share any of the data with a third party. But that third party may not always wait to get the data legitimately. If the right combination of data pieces, including a digital signature, is misappropriated somehow, the results could be drastic.

While it may be accurate to ask hotel guests to be careful and use only what is absolutely necessary, that would actually defeat the very purpose of paying for a smart room in a top-end hotel. If users are to make use of all the conveniences, the security has to be made more stringent. BT

MACHINE LEARNING

ARGUMENT ALERT

SOCIAL NETWORKS are hotbeds for explosive conversations. Verbal clashes, abuse, bullying and harassment are commonplace on platforms such as Twitter and Facebook. Researchers at Cornell University may be able to help tackle this. In a study, spotted by *The Verge*, a group of scientists have figured out how to feed volumes of data on the indicators that a conversation is likely to turn sour. Looking back over a conversation, it isn't difficult for humans to spot early warning signs. The researchers believe that when predictions become good enough, one can salvage a conversation in its initial stages.

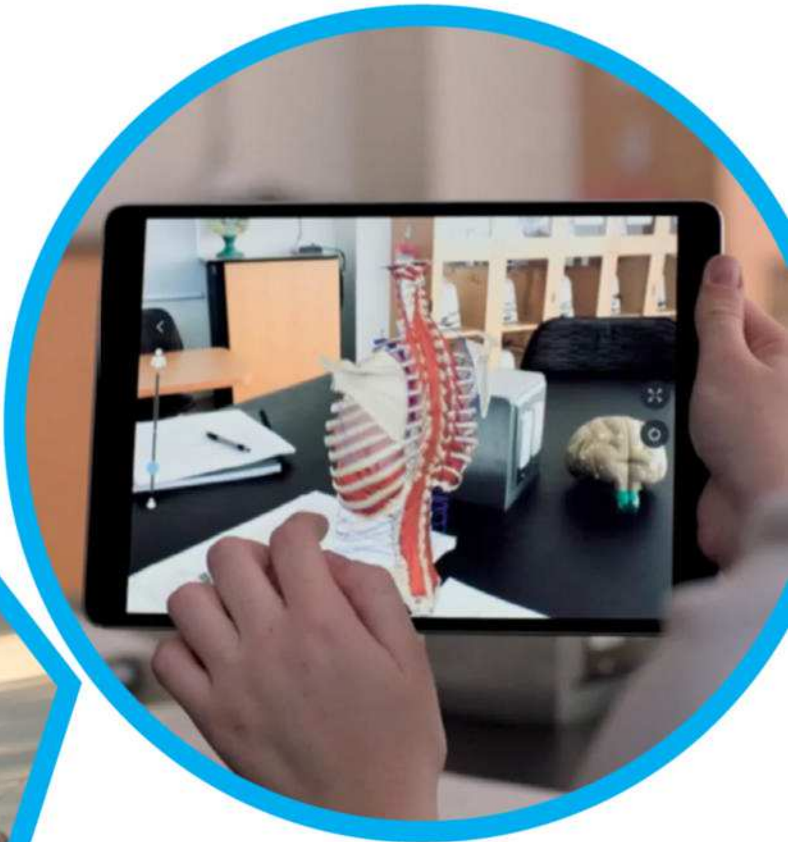
For example, an obvious lack of polite words or overly confrontational questions and a tendency to personalise are signs that a conversation is headed down the wrong path. Give enough instances of this to an AI system and it will quickly learn to spot trouble. Potential uses for this could be better moderation on social networks and comment forums, preventing abuse or harassment and even better meetings at the workplace.

PERSONAL TECH

BETTER THAN REAL

AUGMENTED REALITY IS SET TO TAKE THE TECH WORLD BY STORM IN THE WAKE OF NEW ANNOUNCEMENTS FROM APPLE AND GOOGLE.

By Nidhi Singal



AR OVERLAYS digital information on top of the real environment

Helping the younger generation understand the effects of climate change and the importance of water bodies can be challenging, not to mention tedious. But what if a life-like 3D model could show how the smallest of human actions can impact the environment? WWF Free River, an augmented reality (AR) app does just that. When you point the iPad's camera on a flat surface, the app overlays a realistic 3D model on the screen offering a spectacular landscape view – showing rivers, rain and dams and how they affect habitation, and helps explore more sustainable ways for energy development.

As is sufficiently evident, AR technology, by overlaying digital information on top of the real environment, can render a truly immersive experience across industries. Just pointing the camera on the subject can make things come alive. Take for instance the IKEA Place app that makes shopping for furniture easy. The app helps visualise what furniture would blend well with your home decor. The Human Anatomy app is another example that helps visualise and understand the intricacies of the nervous system in 3D.

AR is not a new technology but has been overshadowed for long by virtual reality (VR) that finds significance in the gaming industry. VR technology disconnects you from the real world and involves the use of specialised headsets (priced as low as ₹220 for a cardboard VR), whereas AR offers a more life-like experience and involves placing a computer-generated graphics in the real world environment. For developers, the lure of creating virtual content instead of placing it over the real environment was a big one. But Apple's CEO Tim Cook has been a big fan of AR. "AR has the ability to amplify human performance instead of isolating humans," said Apple's CEO Tim Cook during one of the company's earnings call.

Apple's ARKit helped developers design apps for a seamless AR experience on iPhones and iPads. ARKit 2, the latest one, will be helpful in designing advanced AR apps that can track 3D objects and support improved face tracking. Google, too, has been working on this technology for quite some time. It has now replaced its Project Tango with ARCore, a platform to build AR experiences. It supports vertical plane detection, which means that instead of pointing at a flat surface, one can place AR objects on different surfaces, like a textured wall; and Augmented Images that can bring images to life by merely pointing the phone at a poster or see what's inside a box without opening it.

FROGGIPEDIA enables students to dissect a frog virtually

Both ARKit 2 and ARCore are encouraging developers to build shared AR experiences – apps and games in which multiple users can participate and view the same virtual environment from a different angle.

Be it the world of education, medicine, gaming, tourism or automobile, AR is finding takers everywhere. There are AR apps that can tell you the dimensions of a door or a box without you having to look for a measurement tape. In fact, Apple is launching a Measure app with iOS 12. The Froggipedia AR app for Apple, from an Indian developer, enables students to see and dissect a frog virtually; instead of the scalpel, the student uses the Apple Pencil. Art lovers can see and analyse the smallest details in an art piece using AR. The Boulevard AR app is a fine example of that.

Although most of these apps can be used on smartphones, AR gadgets such as AR glasses and headgear are on the cards for special uses. In its paper *An Augmented Reality Microscope for Real-time Automated Detection of Cancer*, Google describes a prototype Augmented Reality Microscope (ARM) platform that could possibly help accelerate and democratise the adoption of deep learning tools for pathologists around the world. The platform consists of a modified light microscope that enables real-time image analysis and presentation of the results of machine learning algorithms directly into the field of view.

A new market intelligence report by BIS Research states that the AR market is estimated to reach $198.17 billion by 2025, growing at a CAGR of 65.1 per cent. Mixed Reality, a mix of AR and VR, is also set to grow to $3.68 billion by 2025, at a CAGR of 72 per cent. Mixed Reality requires high-end glasses like Microsoft HoloLens and Meta 2 and has great uses in the manufacturing and medical industries. HoloLens is actually helping doctors achieve more accuracy, shorter surgery times and risk reduction. **BT**

@nidhisingal

HOME THEATRE

CINEMATIC THRILLS

HOW TO GET THE PERFECT SURROUND SOUND, THEATRE EXPERIENCE IN YOUR LIVING ROOM.

BY NIDHI SINGAL

A **THEATRE-LIKE** set-up at home is incomplete without a good projector, powerful audio system and, of course, a tub of popcorn. The market is teeming with projectors and soundbars in a range of shapes, sizes and price points. Among them, the BenQ W1700 stands out as a notable and affordable 4K projector, while the JBL Bar 2.1 soundbar delivers a promising audio experience.

Bringing home the enthralling cinematic experience using a 4K projector and a large flat panel TV is a tempting and, at the same time, an expensive proposition – 4K projectors from brands such as Sony and JVC are priced upwards of ₹3 lakh. But BenQ's W1700 home cinema projector, priced at ₹2,25,000, panders to your whim without leaving you feeling guilty for the indulgence.

WHEN THE PROJECTOR IS TILTED/OFF-CENTRE, THE AUTO KEYSTONE SETTING RE-ALIGNS THE PROJECTION FOR COMFORTABLE VIEWING

A compact conventional-looking projector, BenQ W1700 can be mounted on the ceiling or placed on a table. It houses a lens in the front, grills on the right, connectivity ports at the rear and physical controls, zoom and manual focus controls at the top.

BenQ has added a host of connectivity options – two HDMI ports, PC and VGA port and USB port for power along with audio in and out – as well as a backlit remote that is handy when operating the projector in the dark. BenQ packs in a 0.47" single-DMD

DLP technology – one of the best in the market – with 3,840x2,160 native resolution and 2200 ANSI lumens lamp that creates a 200-inch screen easily.

This projector is ready for use right out of the box. All one has to do is plug in the power cable and connect to the source. When turned on, it automatically searches for the source; it can be swapped manually, too. When the projector is tilted/off-centre, rendering a trapezoid effect, the auto keystone setting comes in handy; it re-aligns the projection for comfortable viewing.

The projected content was sharp and the colours produced were brilliant. The preset modes – bright, vivid TV, cinema and sports – let you customise settings as per your liking. To adjust the focus, one has to use the controls on top of the projector. The sound output of the 5W speaker is good, but does not quite fit in with the cinema set-up. Plugging in a solid soundbar, like the JBL Bar 2.1, is a good idea.

The lifespan of a projector lamp is crucial. BenQ W1700 claims it is close to 4,000 hours on normal usage, can stretch up to 8,000 hours on SmartEco mode and 10,000 hours on economic mode.

THE SIMPLE DESIGN of the all-black JBL Bar 2.1 soundbar makes it blend perfectly with home interiors, whether it is placed flat or mounted on the wall. What it will also do is enhance your entertainment experience by several notches.

The JBL Soundbar has a front display, physical controls on top, connectivity options at the rear (including HDMI ARC, Bluetooth, auxiliary, SPDIF and USB), four 2.25-inch drivers and two 1.25-inch tweeters. It also comes with 6.5" wireless subwoofer and a remote. It was ready to plug and play, when connected with the TV using the HDMI ARC, or with the BenQ W1700 projector using the auxiliary cable or my phone over Bluetooth. It also supports the SPDIF (Sony/Philips Digital Interface) connectivity option for which a cable is duly bundled in the box.

The JBL soundbar offers impeccably clear sound in the standard mode. One can choose from audio modes to go with the genre of content watched – movies, sports, voice and music. In the movie mode, the dialogue delivery was crisp without the highs being compromised. The music mode was ideal when streaming music over YouTube on TV or the smartphone as well.

The wireless subwoofer offered deep bass which is adjustable. The night mode on the remote was a blessing; when turned on it automatically balanced the loud sounds, but works only with Dolby Audio. Multiple remotes to control different gadgets can be a nuisance; thankfully, there is an option to control the soundbar using the TV's remote (works with select TVs).

If an immersive audio experience is what you seek, the JBL Bar 2.1 wireless soundbar, priced at ₹23,499, will be a sound addition to your home theatre set-up. BT

LUXURY

CLASS APART

THE LATEST FROM THE WORLD OF LUXURY.

BY PRACHI BHUCHAR

Auto

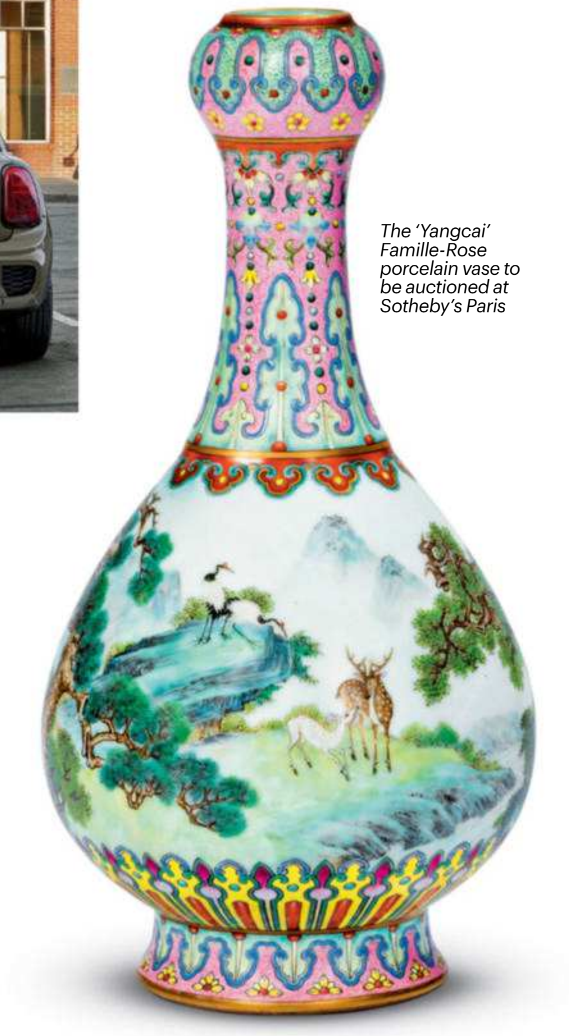
MINI DELIGHT

THERE IS SOMETHING very delightfully old school and fun about the Mini Cooper. The brand has now launched the MINI 3-door Hatch, the MINI 5-door Hatch and the MINI Convertible in India. The new models are cleverly designed and remain true to the brand's philosophy of combining fun with functionality. What takes these cars a notch up is their refined design sensibility and technical superiority of the engines and transmission. These are clearly for the more evolved Mini lovers looking to up their rides.

Auction

Rare Find

MOST AUCTIONS are exciting because they bring something new to the fore and give collectors something exciting to bid for. Sotheby's has announced that a lost treasure of Imperial China has been found in an attic in France. The 18th century 'Yangcai' Famille-Rose porcelain vase, which is clearly from the period of the Qianlong emperor (1736-1795), was accidentally discovered by a family that bought the house where it was found. This rare vase was created at the Jingdezhen workshop for the courts of the emperor. The neck and body of the vase display a rich and varied landscape complete with deer, cranes and pine trees. The unique vase will be auctioned at Sotheby's Paris.



The 'Yangcai' Famille-Rose porcelain vase to be auctioned at Sotheby's Paris

Jewellery

DREAM SEQUENCE

CARTIER HAS ALWAYS collaborated with the best, and its latest brings together the worlds of high jewellery and film. The brand has become the official jewellery partner for the action-packed *Ocean's 8*. The jewellery house was asked to specifically create a jewel for the big heist in the film. The piece, called the Jeanne Toussaint necklace, pays homage to the brand's creative director from the 1930s, who was the first woman to embody Cartier's bold and fearless spirit.She turned to India for inspiration in a big way throughout her career. While the original piece was designed in 1931 for the Maharaja of Nawanagar by Jacques Cartier, it has been aptly described as a dream sequence using coloured diamonds. *Ocean's 8* has an all-woman cast that is gutsy and pulls off an insane heist. Cartier's jewels will feature prominently in the film.

Hotel

Destination Saigon

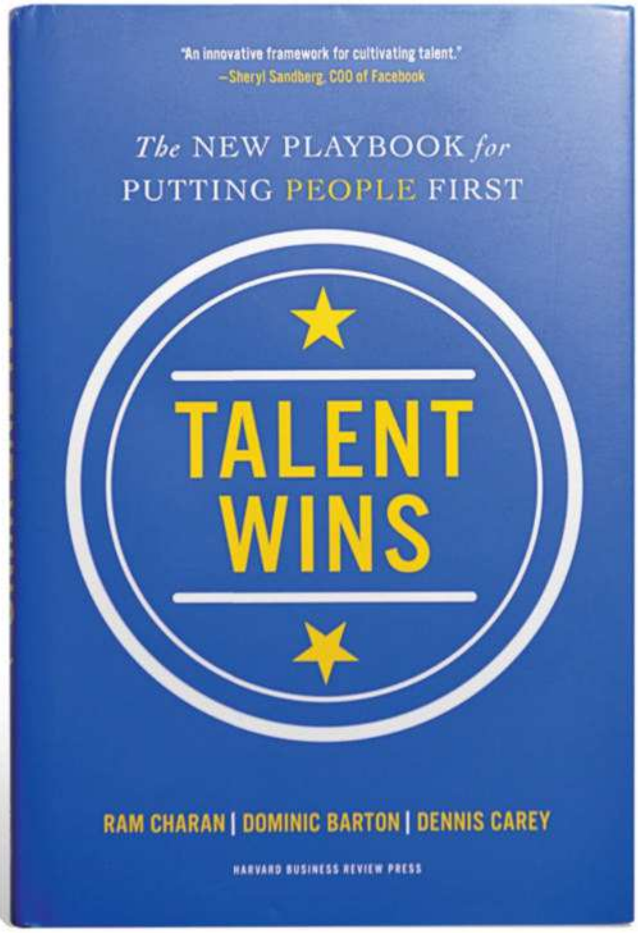
THE MANDARIN Oriental group of hotels are a class apart, not least because of their impeccable service and luxurious interiors. The brand has now announced that it is going to manage a new hotel in Ho Chi Minh in Vietnam, scheduled to open in 2020. Mandarin Oriental will be located in the heart of Saigon and will be part of a building that houses a host of luxury retail brands. With 227 planned rooms and suites, six restaurants and bars, banquet facilities and a spa as well, this one is set to give Asian business and leisure travellers a new address to park themselves at.

Accessories

WOODED STYLE

WITH SUMMER ON in full swing, it's time to shade your eyes right. The Classic Wood collection available at John Jacobs stores is an absolute delight because of its originality. While the frames sport classic shapes, they are crafted using material that gives each pair a wooden feel. In shapes as varied as the wayfarer, clubmaster and round glasses, the pieces from this collection are aesthetic, stylish and provide your eyes with the respite they need from the sun's harsh glare this season.

The frames sport classic shapes



Talent Wins: The New Playbook for Putting People First

By Ram Charan, Dominic Barton and Dennis Carey

Harvard Business Review Press

Pages: 256

Price: ₹999

EX-LIBRIS

THE RULES HAVE CHANGED

A THOUGHT-PROVOKING BOOK THAT WILL COMPEL HR LEADERS TO REVISIT THE WAY TALENT IS MANAGED.

By Prakash Rao

ONE KEY THEME that created ripples in the world of HR last year has been 'future of work'. While people contemplated on the timing of its "arrival", one thing was clear – the work of the future will have no boundaries (of organisational structures, geographies)' it will be fluid. Agility will be the only constant in this ever-evolving world, and with the changing social and talent structure, organisations will find it increasingly difficult to have talent strategies that will not only help them survive but also remain competitive. As the business world grapples with the realities of this future, *Talent Wins*, by Ram Charan, Dominic Barton and Dennis Carey, has arrived at the right time to act as a guidebook or playbook to having an effective talent strategy for a future-ready place of work.

In the words of the authors, "*Talent Wins* will show you what it really takes to create and lead an organisation that lives by one simple but profound concept: People not companies generate value." While this follows the earlier write-ups by Charan – 'It's time to split HR' and 'People before Strategy' which are widely acknowledged in the fraternity – this book is unique in the way it establishes the need to deploy human capital as consciously as deploying financial capital.

At face value, this advice of the authors may sound clichéd, but the book delivers on its promise. The book offers a seven-step process to transform and steer a "people-first" company. Be it the advice to form a G3 (CEO, CFO and CHRO) to drive agenda, to elevate HR to the same level as finance (encouraging formation of a G2:G3 sans the CEO), to introduce your board to a new TSR (Talent Strategy Risk), instead of Total Shareholder Return, or to dismantle organisation pyramids to form a horizontal and flexible structure (that connects and multiplies talent) – the book is full of incidents from leading global organisations that are easy to understand and implement.

One of the highlights of the book is that it does not shy away from highlighting key issues that often remain covered. In today's world, where machine learning is making great strides, the book emphasises on getting the data right using a technology that can provide a single view of the truth. It guides leaders to identify the top 2 per cent of talent and demands removal of bureaucratic systems to unleash their potential. The book gives a clear message to the CEOs that nothing in the HR agenda is trivial and that they would need to be chief recruiting officers for critical talent, developers of GPS for external talent and might even need to make the board their talent management consultants. Towards the end, it also provides a checklist for CEOs as they steer their teams towards the people-first agenda.

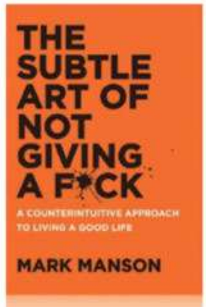
While the book covers almost all major aspects shaping the talent world in detail, it has somehow missed mentioning the changes that will impact talent strategy as the gig economy gains a strong foothold. Also, the book would have garnered interest from a wider audience if there were instances from the perspective of growing small to mid-size organisations (approximately 85 per cent companies globally) that have limited resources to invest on people.

Nevertheless, *Talent Wins* could be a good reference point both for business and HR leaders who dream of establishing a talent-first workplace, where sensing and seizing new opportunities is the norm.

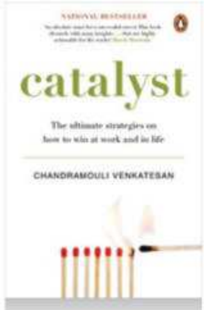
As the authors say, managing a talent-led strategy is not for the faint-hearted; its foundations lie in well-thought decisions, and execution is driven by constant focus and agility of the leader. After all, the goal is to feel alive to the highest potential within your company every minute of the day. That's no mean feat, but it's good to have a playbook along. **BT**

The reviewer is Founding Member and Head of HCM, PeopleStrong

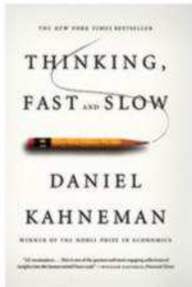
Business Bestsellers*



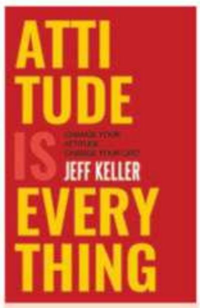
The Subtle Art of Not Giving a F*ck
By Mark Manson
Harper Collins
Price: ₹499



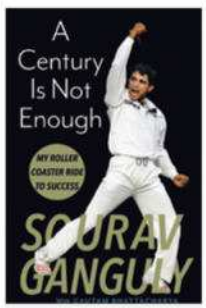
Catalyst
By Chandramouli Venkatesan
India Portfolio
Price: ₹299



Thinking, Fast and Slow (Penguin Press Non-Fiction)
By Daniel Kahneman
Penguin
Price: ₹499



Attitude Is Everything: Change Your Attitude ... Change Your Life!
By Jeff Keller
Collins
Price: ₹199



A Century is not Enough: My Roller Coaster Ride to Success
By Sourav Ganguly
Juggernaut
Price: ₹699

*Top books by sales for May 25- June 7, 2018; Includes only books released after Jan 1, 2015; Information provided by amazon.in

ARVIND MEDIRATTA
MD AND CEO, METRO CASH & CARRY, INDIA

PHOTOGRAPH BY LANTERN CAMERA

Q. The biggest challenge you faced in your career

A. Increasing our footprint and building a culture of customer centricity could be both challenging and satisfying. It all started with setting a clear vision and strategy for the company when I took charge in 2016. The challenges we face in modern wholesale business is very different from retail or omnichannel, and the digital technology creates an added layer of complexity. But thanks to our talented team and business resilience, we have driven growth through processes, products and people.

Q. Your best teacher in business

A. I worked closely with Marico founder Harsh Mariwala who reinvented himself as an entrepreneur and turned his venture into a multiproduct, multigeography company. His journey has inspired many of us.

Q. One management lesson for young people

A. Follow your heart and stay focussed on achieving your dreams. Excellence in execution makes the crucial difference between success and failure. But you must maintain a balance between brilliance and your moral compass as it will help you make the right decisions and walk away from the wrong ones.

Q. Three essential qualities a leader must have

A. Head, heart and guts. Head because leaders must think and plan to realise a company's vision. Heart because they need EQ to connect with people. Guts because they need to take risks and act like an entrepreneur/owner. Finally, we are here because others trusted us. So, give the team the liberty to work independently and learn from their mistakes. BT

"WE'RE HERE BECAUSE OTHERS TRUSTED US. GIVE THE TEAM THE LIBERTY TO WORK INDEPENDENTLY AND LEARN FROM MISTAKES."

Vol. 27, No. 13, for the fortnight June 18 — July 1, 2018. Released on June 18, 2018. Total number of pages 116 (including cover)


ASPIRATION IS, SPOTTING AN OPPORTUNITY WHEN OTHERS SEE A PROBLEM.
Aspiration and Capital First Micro Business Loans. The two pillars for every SME.
However small (or large) your business needs are, we can finance them. Thanks to our minimal documentation, fast disbursals and attractive interest rates, we have helped entrepreneurs fulfil their aspirations.
Call: 1800 103 2791 | Download the app now.
Download on the App Store
Google play
Painting the office
Upgrading to LED lights
Buying furniture for office
Renovating the office and lots more
CAPITAL FIRST
KEEP ASPIRING
MORE THAN 50 LAKH CUSTOMERS FINANCED