India is building on its biotechnology capabilities in cognisance of the sector’s potential and growing contribution to the economy.
THE DIAMOND HUB
14 out of 15 of all the world’s diamonds are processed in India.

For updated information on Indian business and economy
Log on to www.ibef.org
Edited by Anuradha Das Mathur
Consulting Editor: Deepak Gang
Managing Editor: Sangita Thakur Varma
Deputy Managing Editor: Sanjay K. Ojha

Cheer in the Air
With buoyant citizens, bullish market, India is exciting.

Festivals are a cheerful time in India. The buyer sentiment is buoyant and the market is bullish, riding on the all-around retail frenzy. This season the festivities have an added sheen with targeted government measures boosting business and investment morale. The emerging opportunities in various industries and initiatives like Digital India have global companies wanting to play a greater part in the India story. The nascent e-commerce sector with big names in the fray has taken centre stage and is now gaining critical mass. Big buck MNCs and homegrown startups are all competing for a larger share of the Indian consumers’ time and wallet. Amazon with its US$2 billion fresh investment is already clocking milestones in its fastest growing market—India. Read about it in the MNC Watch section.

The government has rolled out the red carpet announcing a slew of measures to boost manufacturing, with the PM giving a clarion call to the global community to come and Make in India. Sectors as varied as IT-BPM and oral health care are on a high growth path. India’s biotechnology industry is also capitalising on its native strengths to harness new and emerging opportunities in order to forge a strong bioeconomy. Read our Cover Story for further insights.

As the government launches its 100 Smart Cities and Model Villages initiative, smart power is the order of the day. A young techie from IIT, Bombay, has developed a technology that makes smart grids smarter. Read up his inspiring story in Innovation Corner. Another techie, about as young, is meanwhile busy trying to scale up his model of a social enterprise that links grassroots artists of Mithila to the World Wide Web. We cover his heartwarming tale in Rural Update. The smell of coffee took us on the trail to the Coorg region while Jodhpur beckoned as the best place to beat the blues. Do book in advance to avoid the festive rush. It’s an exciting read this issue on the changing dynamics of a resurgent economy. The next chapter of the India story begins!

Sangita Thakur Varma
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Harnessing its capabilities in R&D, a qualified workforce and conducive policy regime, India is focussing on emerging sectors to build its bioeconomy.

Publisher, Printer Monika Choudhry has got 'India Now Business and Economy' printed by GH Prints Private Limited, A-256 Okhla, New Delhi-110020; and published from Apparel House, 519-522, 5th Floor, Sector – 44, Gurugram – 122 003 on behalf of India Brand Equity Foundation (IBEF), Ministry of Commerce, Editor – Anuradha Das Mathur.

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10 | ON THE COFFEE TRAIL The whiff of freshly brewed coffee is addictive. In the Coorg-Chikmagalur region the air is redolent with all things coffee—plantations, pods and the freshly brewed ones—in a heavenly setting.

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India-Japan Notch up Defence, Ties PM invites Japan to invest

IN A SIGNIFICANT move, India and Japan strengthened their bilateral ties with the signing of defence and strategic pacts. They signed five agreements covering defence exchanges, cooperation in clean energy, health care, roads and highways and women issues and vowed to take their relationship to the next level during Prime Minister Narendra Modi’s five-day visit to Japan in September this year.

Modi also invited investments into India, assuring Japanese businessmen of a smooth business environment. “Japan will play an increasingly important role in India’s economic transformation and development. Prime Minister Abe has pledged a qualitatively new level of Japanese support and partnership for India’s inclusive development, including transformation of India’s manufacturing and infrastructure sectors,” Modi said.

Japan, on the other hand, promised to invest US$ 33.5 billion over the next five years in development projects of India. In a bid to double Japanese foreign direct investment and the number of Japanese companies in India within five years, Modi and Abe agreed to launch the Japan-India Investment Promotion Partnership.
Mangalyaan Enters Mars Orbit in Maiden Attempt
India joins elite club of Martian explorers

India’s Mars Orbiter Mission (MOM) spacecraft, Mangalyaan, entered the Red Planet’s orbit in its maiden attempt early morning on September 24, 2014, heralding a historic moment for the country’s space programme. Indian Space Research Organisation (ISRO) successfully ignited the main 440 Newton liquid engine and eight small thrusters that fired for 24 minutes and trimmed the speed of the craft to allow smooth orbit insertion under Mars’ shadow. Two hours later, Mangalyaan transmitted the first pictures from Mars. India is the first country to achieve this feat on the first attempt and the first country in Asia to successfully inject its satellite into Mars’ orbit. It joined the elite club of Martian explorers, which includes the US, the European Space Agency (ESA) and Russia. Mangalyaan was made in just 15 months at a cost of US$ 73.27 million, the cheapest inter-planetary mission ever to be undertaken.

Mobile Earthquake Warning
Indian Institute of Technology, Gandhinagar, has developed sensors that when connected to a mobile phone turn it into a simple seismometer. After connecting, the user needs to download the application from the community seismic network website to detect vibrations from earthquakes.

Barack Obama


“I’m looking forward to building on this meeting so that we can continue to promote progress in both countries and around the world…we have so much in common it is critical for us to continue to deepen and broaden the existing framework of partnership and friendship…”

— Barack Obama, President, USA
Private Equity Industry Accelerates in 2014

Private equity (PE) industry in India is growing rapidly with investment in the country expected to reach US$ 12 billion in 2014. The traction being witnessed is primarily on account of the Government of India’s encouraging reforms. In the first half of the year, private equity investment stood at US$ 6 billion in the country. “India is expected to witness investments worth US$ 12 billion in 2014 by private equity players, double the amount invested by them last year,” Indian Private Equity and Venture Capital Association (IVCA) President Arvind Mathur told the media. Mathur was attending a private equity conference being held in Port Louis, Mauritius. The conference was attended by around 200 participants from across the world including India, China, Japan and various African nations.

Experts are attributing the rise in investor sentiments to a business-friendly government. For investors, India’s attractiveness as an investment friendly destination is on the rise. As a result, PE players from across the globe are increasingly pumping in huge sums in e-commerce, infrastructure, real estate and manufacturing activities—currently the areas promising maximum opportunity for fast growth in the country. More funds are expected to flow into these industries, as the government too has put special significance on developing them. According to a report by international realty services firm Cushman & Wakefield, big deals in the real estate sector are in the offing especially in the commercial office space during the second half of 2014. PE investments in the sector are expected to reach ₹7,900 crore (US$ 12.9 billion) at the end of the calendar year. PE investments in residential projects are also on the rise as they are being viewed favourably by developers.

With Prime Minister Narendra Modi formally launching the Make in India campaign in September, the PE industry has taken note of the potential for investment. India needs US$ 1 trillion of investment in infrastructure. PE-led companies are also leading the IPO pipeline as they seek to capitalise on the stock market’s buoyant sentiments.

“India is a strategic market for Daimler Trucks globally. Its long-term market potential is intact... By now, it should be clear that we intend to be a major player in the Indian CV market.”

Wolfgang Bernhard, Member Board of Management, Daimler AG

“With burgeoning middle class...huge population in the less than 35 years of age group...more opportunities in India.”

David Bennett, Corporate VP & GM (APAC and Japan), AMD
Andhra Pradesh Unveils Ambitious Electronics Policy Aims for investment to push employment

Andhra Pradesh government is all set to woo the expanding electronics market in India with the unveiling of a comprehensive electronics policy 2014–2020. The policy, which replaced Andhra Pradesh Hardware Policy 2012–17, envisages an Information Technology and Investment Region (ITIR) and mega electronics hub in Visakhapatnam and calls for the setting up of an autonomous society as an Empowered Mission for Electronics & IT Promotion. The government expressed its intention to develop 20 electronics manufacturing clusters across the state in the coming six years, and attract investments of US$ 5 billion besides generating employment for 0.4 million people during the next five years. The electronics hardware industry has been notified as an essential service under Andhra Pradesh Essential Services Maintenance Act. Every effort would be made to facilitate the setting up of the hardware park in Kakinada, as proposed by the Centre, by providing necessary infrastructure and other facilities, the state government said.

There are plans to set up electronics bazaars at Visakhapatnam, Vijayawada and Tirupati to act as platforms for electronic products. Roadshows are planned to be held in the United States, Japan, Germany, Korea, Taiwan and China to attract investment. An annual mega electronics event is also to be organised in the state.

Infrastructure Tracker

India’s Infrastructure Market to Reach US$ 6.6 Tn by 2025: PwC Transportation, utilities investments to triple in 10 years

India’s infrastructure market is expected to touch US$ 6.6 trillion by 2025, which will account for about 12.5 per cent of the Asia Pacific infrastructure market, said a report released by consultancy firm PricewaterhouseCoopers (PwC). As per the report, the Asia Pacific infrastructure market is expected to grow by 7–8 per cent a year over the next decade to over US$ 53.6 trillion by 2025, wresting about 60 per cent of the global infrastructure market.

The increase in spending in the infrastructure sector in India is expected to be catalysed by sectors like housing, telecom, health care, education and transportation, among others, the report added. “Overall, India’s share of the Asia Pacific infrastructure market is expected to continue to grow, reaching around 12.5 per cent or US$ 6.6 trillion by 2025,” it said.

According to the report, transportation and utilities investments are expected to triple over the next 10 years, with the rise in disposable income and travel demand.

Tourism Tracker

Incredible India Mobile App Quick tips for tourists

The Ministry of Tourism launched the Incredible India mobile application in the first week of September, which will assist foreign and domestic tourists to access information about recognised tourism service providers. While the details will be provided to the tourists on their mobile phones according to their location, tourists can also ask for similar details on any other city they plan to visit in the future. The mobile app, developed by the National Informatics Centre (NIC), will also display popular places in India and demonstrates the Ministry’s commitment towards using technology to deliver best in class services. The Incredible India Mobile Application (IMA) is available on Google Play Store and App Store for Android phones and iPhones respectively.
Key performance indicators of the Indian economy with patterns, trends and forecasts

Population

<table>
<thead>
<tr>
<th>Area</th>
<th>Population</th>
<th>Male</th>
<th>Female</th>
<th>Population Density</th>
<th>Urban Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.287,263 sq km</td>
<td>1.27 billion</td>
<td>655.8 million</td>
<td>614.4 million</td>
<td>416 per sq km</td>
<td>380.214 million</td>
</tr>
</tbody>
</table>

India’s Economic Outlook Projection

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>2010-11 (A)</th>
<th>2011-12 (A)</th>
<th>2012-13 (A)</th>
<th>2013-14 (R)</th>
<th>2014-15 (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP Growth</td>
<td>9.3%</td>
<td>6.2%</td>
<td>5%</td>
<td>4.7%</td>
<td>5.5% (P)</td>
</tr>
<tr>
<td>CPI</td>
<td>14.44%</td>
<td>8.87%</td>
<td>9.5%</td>
<td>8.45%</td>
<td>8.3% (Q4)</td>
</tr>
</tbody>
</table>

Source: RBI

Real GDP growth rate forecast for 2014-15 was revised downwards to 5.5 per cent from 5.6 per cent from the previous round. While growth forecast for agriculture and allied activities has been revised upwards, the growth forecast for industry has been revised down to 3.5 per cent from 3.6 per cent and for services to 6.9 per cent from 7.0 per cent.

Mean Probability Pattern of Growth Forecast

Chart 1: Year-on-Year Growth in IIP

Chart 2: Year-on-Year Growth in Sectoral Indices

Source: RBI survey of professional forecasters, 27th Round (Q4: 2013-14)
*Chart 3: Contribution to IIP Growth in July 2014*

- **Electricity**: 1.2%
- **Mining**: 0.2%
- **Non-durables**: 0.5%
- **Intermediate**: 0.4%
- **Basic**: 3.1%
- **Durable**: -2.9%

*Source: CSO; ICRA Research*

*Chart 4: FDI and FII Inflows (in US$ billion)*

<table>
<thead>
<tr>
<th>Month</th>
<th>FDI</th>
<th>FII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr-13</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>May-13</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Jun-13</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>Jul-13</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Aug-13</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Sep-13</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Oct-13</td>
<td>-1.0</td>
<td></td>
</tr>
<tr>
<td>Nov-13</td>
<td>-2.0</td>
<td></td>
</tr>
<tr>
<td>Dec-13</td>
<td>-3.0</td>
<td></td>
</tr>
</tbody>
</table>

*Source: RBI*

*Stock Market Movements*

<table>
<thead>
<tr>
<th>Month</th>
<th>Sensex</th>
<th>%age Change</th>
<th>S&amp;P CNX NIFTY</th>
<th>%age Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug-13</td>
<td>18,641.41</td>
<td>-5%</td>
<td>5,510.44</td>
<td>-7%</td>
</tr>
<tr>
<td>Sep-13</td>
<td>19,627.23</td>
<td>5%</td>
<td>5,797.48</td>
<td>5%</td>
</tr>
<tr>
<td>Oct-13</td>
<td>20,432.94</td>
<td>4%</td>
<td>6,083.87</td>
<td>5%</td>
</tr>
<tr>
<td>Nov-13</td>
<td>20,791.33</td>
<td>1%</td>
<td>6,128.64</td>
<td>1%</td>
</tr>
<tr>
<td>Dec-13</td>
<td>21,170.68</td>
<td>2%</td>
<td>6,246.87</td>
<td>2%</td>
</tr>
<tr>
<td>Jan-14</td>
<td>20,513.85</td>
<td>-3%</td>
<td>6,221.16</td>
<td>0%</td>
</tr>
<tr>
<td>Feb-14</td>
<td>20,521.34</td>
<td>0%</td>
<td>6,098.74</td>
<td>-2%</td>
</tr>
<tr>
<td>Mar-14</td>
<td>21,813.71</td>
<td>6%</td>
<td>6,307.98</td>
<td>7%</td>
</tr>
<tr>
<td>Apr-14</td>
<td>22,859.44</td>
<td>4%</td>
<td>6,760.85</td>
<td>4%</td>
</tr>
<tr>
<td>May-14</td>
<td>23,745.90</td>
<td>5%</td>
<td>7,083.15</td>
<td>5%</td>
</tr>
<tr>
<td>June-14</td>
<td>25,266.80</td>
<td>6%</td>
<td>7,611.35</td>
<td>7%</td>
</tr>
<tr>
<td>July-14</td>
<td>25,723.46</td>
<td>2%</td>
<td>7,676.76</td>
<td>1%</td>
</tr>
<tr>
<td>Aug-14</td>
<td>26,057.96</td>
<td>1%</td>
<td>7,787.35</td>
<td>1%</td>
</tr>
</tbody>
</table>

*Source: RBI*

*Currency Exchange Rate*

<table>
<thead>
<tr>
<th>Month</th>
<th>INR/USD</th>
<th>INR/GBP</th>
<th>INR/JPY</th>
<th>INR/EUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jul-13</td>
<td>61.21</td>
<td>97.87</td>
<td>64.57</td>
<td>84.18</td>
</tr>
<tr>
<td>Aug-13</td>
<td>59.78</td>
<td>90.78</td>
<td>60.00</td>
<td>78.20</td>
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<tr>
<td>Sep-13</td>
<td>61.75</td>
<td>101.09</td>
<td>64.23</td>
<td>85.11</td>
</tr>
<tr>
<td>Oct-13</td>
<td>61.61</td>
<td>99.20</td>
<td>62.99</td>
<td>84.90</td>
</tr>
<tr>
<td>Nov-13</td>
<td>62.63</td>
<td>100.88</td>
<td>62.68</td>
<td>84.53</td>
</tr>
<tr>
<td>Dec-13</td>
<td>61.91</td>
<td>101.40</td>
<td>59.83</td>
<td>84.82</td>
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<tr>
<td>Jan-14</td>
<td>60.42</td>
<td>102.29</td>
<td>59.66</td>
<td>84.60</td>
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<tr>
<td>Feb-14</td>
<td>62.25</td>
<td>86.89</td>
<td>61.18</td>
<td>84.96</td>
</tr>
<tr>
<td>Mar-14</td>
<td>61.01</td>
<td>102.97</td>
<td>61.01</td>
<td>84.61</td>
</tr>
<tr>
<td>Apr-14</td>
<td>60.36</td>
<td>101.08</td>
<td>58.86</td>
<td>83.35</td>
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<tr>
<td>May-14</td>
<td>59.31</td>
<td>99.94</td>
<td>58.28</td>
<td>81.49</td>
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<tr>
<td>Jun-14</td>
<td>59.73</td>
<td>100.98</td>
<td>58.53</td>
<td>81.24</td>
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<tr>
<td>Jul-14</td>
<td>59.91</td>
<td>102.68</td>
<td>59.91</td>
<td>81.65</td>
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<tr>
<td>Aug-14</td>
<td>60.89</td>
<td>101.8</td>
<td>59.16</td>
<td>81.14</td>
</tr>
</tbody>
</table>

*Source: RBI*

*Key Macroeconomic Indicators*

**Cash Reserve Ratio (%)**

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan-14</th>
<th>Feb-14</th>
<th>Mar-14</th>
<th>Apr-14</th>
<th>May-14</th>
<th>Jun-14</th>
<th>Jul-14</th>
<th>Aug-14</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.85%</td>
<td>5.85%</td>
<td>5.85%</td>
<td>5.85%</td>
<td>5.85%</td>
<td>5.85%</td>
<td>5.85%</td>
<td>5.85%</td>
</tr>
</tbody>
</table>

*Source: RBI*

**Repo Rate and Reverse Repo Rate (%)**

<table>
<thead>
<tr>
<th>Month</th>
<th>Repo Rate</th>
<th>Reverse Repo Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr-13</td>
<td>7.25%</td>
<td>7.25%</td>
</tr>
<tr>
<td>May-13</td>
<td>7.75%</td>
<td>7.75%</td>
</tr>
<tr>
<td>Jun-13</td>
<td>7.75%</td>
<td>7.75%</td>
</tr>
<tr>
<td>Jul-13</td>
<td>7.75%</td>
<td>7.75%</td>
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<tr>
<td>Aug-13</td>
<td>8.00%</td>
<td>8.00%</td>
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<td>Sep-13</td>
<td>8.00%</td>
<td>8.00%</td>
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<tr>
<td>Oct-13</td>
<td>8.00%</td>
<td>8.00%</td>
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<tr>
<td>Nov-13</td>
<td>8.00%</td>
<td>8.00%</td>
</tr>
<tr>
<td>Dec-13</td>
<td>8.00%</td>
<td>8.00%</td>
</tr>
<tr>
<td>Jan-14</td>
<td>8.00%</td>
<td>8.00%</td>
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<tr>
<td>Feb-14</td>
<td>8.00%</td>
<td>8.00%</td>
</tr>
<tr>
<td>Mar-14</td>
<td>8.00%</td>
<td>8.00%</td>
</tr>
</tbody>
</table>

*Source: RBI*
Coffee tourism in Coorg-Chikmagalur is set to get a big push with plans to expand the portfolio of homestays through the Karnataka Tourism Policy 2014–2019. As the region readies to serve up an exotic brew for sensory delights, the aroma of a ‘cupping’ welcome is already wafting worldwide.  

ON THE COFFEE TRAIL

Coffee in Coorg: (Anti-clockwise)
Coorg, where the clouds greet visitors; ripening coffee berries; a couple on the coffee trail.

BY KAVITHA SRINIVASA
ome December and it is common for tourists to indulge in picking berries in plantations across Karnataka. Crimson red berries are handpicked, sun dried, pulped, processed and brewed. When the end product arrives at the table, we know it as a stimulating cup of coffee. The hazy morning sun and the mist surrounding the Western Ghats range overlooking a British colonial bungalow in a plantation lend a tinge of romance to the berry picking session.

That’s the scene at the coffee trail in a plantation in Coorg, Karnataka. Life moves at a leisurely pace in these parts. Coffee breaks in the morning are an element of routine. As the evening progresses, bonfires add a warm glow to conversations that unfold in the courtyards of charming bungalows.

Coorg, the anglicised version of Kodagu, is an administrative district in Karnataka. It’s a hill station and occupies an area of 4,102 sq km in the Western Ghats of southwestern Karnataka. Coorg district is known as the Scotland of India because of its exceptional natural beauty. Its headquarters are at Mercara, the anglicised version of Madikeri. Kodavas, its people, are considered a warrior race.

“The coffee country of Coorg-Chikmagalur and Sakleshpur has only evolved over the last few years. In recent years, the hub of India’s coffee growing country of Coorg-Chikmagalur, has been gaining popularity as the most sought after holiday destination. The region was known for its beauty but that the region was coffee country was known to a few,” says Anil Kumar Bhandari, President, India Coffee Trust, Vice Chairman, India International Coffee Festival (IICF) and Member, Coffee Board. Over the last decade, people from different parts of the country have relocated to Bangalore and have discovered the charms of old holiday destinations like Coorg, Chikmagalur and Mangalore, as they are more pleasant, affordable and less crowded than the commonly explored mainstream options.

Historically, coffee was first cultivated in India in Chikmagalur about 350 years ago. Legend has it that Baba Budan, a 17th-century Sufi saint, introduced the coffee plant to India. He brought seven coffee beans from the port of Mocha, Yemen, and planted them on the hilly slopes of the Baba Budan Giri range in Chikmagalur. “Commercial coffee plantations came up in the second half of the 19th century when British entrepreneurs began to establish coffee, tea and rubber plantations on the Western Ghats. The establishment of coffee plantations started from a southerly direction. Coorg being a small and compact area and being more southerly than Chikmagalur saw the first coffee plantations being established there,” explains Bhandari and adds, “India accounts for over 4 per cent of the world’s coffee production and is the world’s sixth largest coffee producer. Karnataka, Kerala, Tamil Nadu and Andhra Pradesh account for 90 per cent of the country’s total coffee produced and 85 per cent of the planted area.”

Globally, destinations like Guatemala and Brazil also promote coffee trails, but a coffee trail in Coorg is unique. The Sakleshpur-Hassan highway in Karnataka runs through the Western Ghats (Coorg too comes under this belt). Western Ghats, with its ecology, is Coorg’s USP. A UNESCO World Heritage Site, Western Ghats is one of the world’s 10 hottest biodiversity hotspots. Home to dense forests, flowering plants and diverse species of birds and animals, the flora-fauna of Coorg changes every few kilometres. All coffee plantations are part of the forest and vice versa. With this, the Talakaveri River flows in the background.

“As you travel through the forest, various facets of nature change ranging from natural streams, wildlife, bushes, thickets to dense forest. Almost each plantation has a distinct backdrop, and for the same reason, no two plantations are alike,” comments Arvind Jadhav, IAS, Additional Chief Secretary – Tourism, Government of Karnataka. “This makes a coffee trail in a Coorg plantation an experiential holiday,” he says. The vast variety of visual treats that Coorg offers spice up the aromatic coffee destination’s attractions manifold.

Coorg as a Coffee Destination
Karnataka produces over 70 per cent of India’s coffee. Though Chikmagalur is the Coffee Country of India, Coorg is India’s largest coffee producing district, and has its own distinct appeal due to its history and culture. However like all plants, coffee plants are attacked by insects, pests and diseases, which affect their productivity. This combined with a trend of falling coffee prices made it difficult to meet production costs. In 2006, a group of estate owners formed the Coorg Homestay Association and expressed their concern to the state government. The Department of Tourism (DoT), Government of Karnataka
(GoK) partnered with estates and introduced a homestay policy called ‘Athithi’ to supplement the income of estate owners and create homestay accommodations for tourists in Coorg, Chikmagalur and other destinations in Karnataka.

Formulated in 2009, the Homestay Policy is Karnataka’s signature scheme. Homestays are a take-off from the bed and breakfast option in the West. As per the Policy, the home should be in a coffee plantation with owners living on the premises. It should have minimum two and maximum five bedrooms to let out in order to qualify as a homestay. A homestay registered with the DoT uses the Karnataka Tourism brand for marketing and avails exemption from luxury and sales tax/VAT, among other benefits. In turn, homestays facilitate cultural exchange and generate tourism revenue. They offer an extended family atmosphere. The guests partake in all activities, be it picking fruit, strolling around the estate, participating in festivals or family weddings. They also visit the coffee processing units to see raw coffee beans being roasted and powdered, before savouring the experience. So far, 249 homestays in Coorg and 67 homestays in Chikmagalur have been registered with the DoT under different categories.

The proposed Karnataka Tourism Policy 2014-2019 is expected to be released in the coming months. The policy envisions making Karnataka among the top 50 tourism destinations in the world. As a part of the policy, guidelines for homestays have been strengthened to incentivise registered homestays across Karnataka. A well-defined mechanism for inspection, certification and licensing of these homestays is now in place. Given the potential of coffee tourism, the policy plans to create more rooms and tap those coffee plantations which are not registered with the Tourism department. These bungalows will be given incentives for their upkeep. An in-house team from the Tourism department will train first time investors on housekeeping and accounts maintenance. “We plan to give cash incentives of up to 40 per cent of total project cost. In order to preserve the ecology of the place, we didn’t build hotels but created additional rooms through homestays. This generates revenue and allows locals to showcase their heritage,” explains Jadhav.

The homestays will be categorised under the Heritage Tourism Guidelines. “The homestays will be treated as heritage houses. There will be a ticketed entry fee with designated visiting hours for guests,” adds Jadhav. The new policy plans to create portals for homestays of Coorg and Chikmagalur by the end of 2014. The portal will differentiate homestays based on grading, conducted by rating agencies like ICRA and CRISIL. “Coffee tourism is coming of age finally. Today, in the terrains of Coorg and Chikmagalur, coffee tourism attracts both Indians and people from all over the world. In many ways traditional homestays of yore are morphing into full blown guesthouses. Many of these homestays add allure and value to the coffee landscape all around,” explains Harish Bijoor, Brand expert & CEO, Harish Bijoor Consults Inc.

**Marketing Blitzkrieg**

A new brand promotion is being worked out. “We will continue with the homestay policy and eventually plan to promote the Coorg-Chikmagalur-Hassan belt as agriculture/horticulture tourism, complete with coffee and orange trails,” informs Jadhav. Coorg and coffee are being promoted on various platforms. When Karnataka was selected as the Theme State at the 2013 International Crafts Mela in Surajkund, Coorg and its culture were showcased. “The 15-day festival had 10 lakh visitors. As guests should experience the cuisine, culture and craft of the place, we participated in the International Coffee
Festival this year. It was organised by the Coffee Board and we were one of the sponsors,” reasons G Sathyavathi, Director, Department of Tourism, Government of Karnataka and adds, “We plan to conduct a coffee festival in Chikmagalur this year, though it’s yet to be finalised.”

The Government of Karnataka had initiated a Tourism Vision group in October 2013 to advise the government on the tourism sector. Karnataka with its tagline—One State. Many Worlds—aims to create 4.3 million jobs and generate ₹85,000 crore (US$ 13.97 billion) in the next decade in the tourism sector. According to the Karnataka Tourism Vision Group 2014 Report, the Bangalore-Mysore-Coorg circuit region has been the most popular one in Karnataka. It also has the highest number of rooms in multiple locations.

**Makeover for Tourist Attractions**
Homestays have employed locals as guides, tourist agents, taxi drivers, administrative staff and chefs. The new policy will open out more such channels. “Around 70 per cent of Coorg district is covered by coffee plantations. Coorg has around 2,000 homestays, which need to be regulated and authenticated under the new policy,” highlights KM Karumbaiah, President, Coorg Homestay Association, who also runs Ajantha Homestay. He adds, “The new Homestay policy will give tourists more options for accommodation. We plan to improve places of tourist interest through better connectivity.” For instance, Abbey Waterfalls, which is 8 km from the town of Madikeri is known for its scenic beauty. Since the waterfall is located in private plantations, it is accessible through a narrow road. A project to improve connectivity to this waterfall is on the cards.

Coorg is preparing for an increased tourist inflow. Newer waste disposal facilities are being explored. “Touchscreen kiosks are being introduced in tourist spots and locals are being trained as tourist guides. A cultural heritage centre which will showcase Coorg culture and history will be ready in the coming months,” adds Karumbaiah.

**Hospitality in Nature’s Bounty**
Just when government promoted homestays picked up, private players also decided to cash in on the growing demand. Tata Coffee’s hospitality brand Plantation Trails is positioned as a coffee tourism experience, though not a homestay experience. “As the company-owned British colonial bungalows in Coorg and Chikmagalur are around 150-200 years old, we wanted to give guests a flavour of the region. We began in 2006-2007 and the concept evolved as Plantation Trails,” elaborates Gautam Prakash, Head, Plantation Trails.

Each property has something different to offer. A game of golf and informal cookery sessions are value-adds at the Plantation Trails. “Naturalists accompany guests on nature walks and bird watching tours. Locals double up as jeep safari guides who take guests through a bean-to-cup plantation tour, complete with insights about commercial coffee species like Arabica and Robusta,” explains Prakash. Guests can also get a whiff of vanilla, cardamom or pepper since they are grown as inter-crops with coffee. Besides Plantation Trails, other prominent players include Vivanta by Taj, Green Hills Estate, Orange County and The Tamara, among others.

India is renowned for its unique shade grown coffee, in that it is grown under a natural canopy of thick flora which is the hallmark of the Western Ghats. “This lends a unique flavour to the coffee, which is influenced by the monsoon and spices that grow around it and the various species of fauna that thrive alongside. Hence, shade grown coffee can be regarded as a kind of natural forest, which supports rich biodiversity,” sums up Bhandari. The homestay experience on offer in the state of Karnataka brings this entire farm-to-cup experience alive. A tourist gets to better appreciate not just the finer nuances of Indian coffee, but also how planters have ensured a beautiful and invaluable symbiosis with the environment, creating a benchmark for farming practices globally.

—Arvind Jadhav, Addl Chief Secretary – Tourism, Govt of Karnataka
ON A WINNING WICKET

Amazon’s global experience, innovative track record and a good mix of product offerings and formats promise it an edge in India’s e-commerce space.

BY BINITA SINGH

India’s retail industry valued at US$ 525 billion (2013) and forecast to grow to US$ 1,040 billion by 2020 (Source: Technopak Analysis), is currently one of the hottest destinations for global players wanting a slice of the action. There is also the country’s burgeoning wholesale industry on the global radar, which according to US retailer Walmart, is estimated to be around US$ 300 billion currently and slated to grow to US$ 700 billion by 2020. According to Crisil Research, the Indian online retail industry in 2012-13 was estimated at ₹13,900 crore (US$ 2.26 billion) in revenues growing at a compound annual growth rate (CAGR) of more than 56 per cent. The market is expected to grow at 50–55 per cent CAGR to ₹50,400 crore (US$ 8.2 billion) by 2015-16.

For Amazon India, with reported plans to also launch a portal for wholesale merchants in the country—its only other such offering is in the US—India’s burgeoning e-commerce industry has much to offer. The e-commerce major recently announced investments of a mind boggling US$ 2 billion in India in order capture a bigger share of the market. The company is employing its global strategy in India too, as says Amit Agarwal, VP & Country Manager, Amazon India, “Our global vision is to be the earth’s most customer centric company and enable customers to find and buy anything online. In line with that vision, you will see us work backwards from the consumers and invent on their behalf with the goal of providing a vast selection of products at everyday low prices with fast and reliable delivery and a convenient and trustworthy shopping experience.” The logic at work seems to be simple, as he elucidates, “If we are able to provide what customers want, they will choose us.”

Amazon was founded by Jeff Bezos in 1995, and the amazon.com website began operations as an online store offering books. The book platform
and to penetrate their native insecurities over faceless transactions, Amazon is also promising customers a safe and secure ordering experience, convenient electronic payments including EMIs, no-risk, hassle-free returns policy, 24x7 customer service support, and a globally recognised and comprehensive 100 per cent purchase protection provided by its A-to-Z Guarantee.

The company is on an aggressive growth path in the Indian market. In the last one year, Amazon established a network of seven warehouses straddling the country. Its marketplace is growing with more than 8,500 merchants already in its fold and with a product portfolio comprising over 28 categories and more than 17 million different products. The company is slated to reach a sales figure of US$1 billion in India in 2014-15. Amazon started its journey in India in February 2012 with the launch of Junglee.com. Since then, Junglee has emerged to become the No.1 product search and comparison shopping site in India. Meanwhile, Amazon, operational in India for over 15 months, has received tremendous response from both customers and sellers. “We launched in India with two departments—books and movies & TV shows. We have witnessed phenomenal selection growth across several categories and are already the largest store in 12 of the 30 departments that we have on www.amazon.in,” says Agarwal of the company’s rapid strides in the country.

The company has also kept its focus on customer services as a winning proposition in the crowded market. Amazon was the first one in India to introduce premium guaranteed delivery services including the ‘One-Day Delivery’ service for items fulfilled by Amazon. It makes available more than 325,000 products for next day delivery across hundreds of pin codes in India. More than 60 per cent of its customer demand is already eligible

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was guided by Bezos’ belief that only the internet could offer customers the convenience of browsing a selection of millions of book titles in a single sitting. His perspicacity regarding the online space paid off with customers in 50 states and 45 countries filing orders during the first 30 days of business. The orders were fulfilled and shipped from the founder’s Seattle-area garage.

Technological innovation drives the growth of Amazon.com and this is as per the design of its policy. The idea is to offer customers more types of products, more conveniently, and at even lower prices. In India too, it is the same vision of Bezos that drives the company.

Agarwal emphasises the company’s long term vision for India saying that e-commerce is at a nascent stage in the country and provides a lot of scope for innovation. Amazon intends to tap this opportunity and work on its “focus areas” to raise the bar for online shopping in the country. Elaborating on the company’s USPs and the vision plan for India, he adds, “We remain customer-obsessed. We are going to relentlessly focus on expanding sellers and selection on the platform, innovate on various customer touch points and provide fast and reliable delivery of services.” In sync with Indian consumers’ peculiarities regarding payment modes
for next-day shipping on products fulfilled by Amazon. Agarwal says that the company uses the extensive Indian Postal Services (IPS) network to service over 19,000 pin codes through 140,000 post offices across all 35 states and Union Territories in India.

Simultaneously, Amazon India has been working on expanding its seller base. “We are invested in making sellers successful,” says Agarwal. Perhaps, because the company is continually looking for ways to do the heavy lifting for sellers to enable them to sell more and earn more, its initial base of 100 sellers has grown to more than 10,000 sellers. Additionally, Amazon offers sellers a unique and comprehensive suite of services—Self-Service Registration (SSR), Selling on Amazon (SOA), Amazon Easy Ship & Fulfilment by Amazon (FBA).

The seven fulfilment centres (FCs) of the company spanning the states of Maharashtra, Karnataka, Haryana, Delhi, Tamil Nadu, Gujarat and Rajasthan have a total storage capacity of half a million square feet. Out of these, five are operational and two will be operational soon. Amazon has taken special care to be small business friendly in India with its FCs aimed at meeting the fulfilment needs of retailers and small and medium-sized businesses to help them achieve nationwide scale. “In India, we follow the online marketplace model where sellers of all sizes use our platform to sell to their customers across the country. The model enables a faster, convenient and nationwide access to customers for sellers registered on our platform, especially small and medium businesses, at significantly lower costs,” says Agarwal talking about the company’s operating model. While Amazon’s endeavour is to be “India’s most customer-centric company” by giving customers more of what they want—low prices, vast selection, fast and reliable delivery, and a trusted and convenient experience—at the same time, the company ensures that sellers in the country have access to a world-class e-commerce platform to reach out to customers.

India’s profile as a mobile nation prompted Amazon to launch its mobile shopping app for Android and iOS phones within a couple of months of its India launch. In August, the company also launched the Amazon Shopping app for Windows phones. Today, over 35 per cent of the company’s traffic comes from mobile devices and more than 45 per cent of orders on amazon.in come from outside the top eight metros. The trend reveals the increasing penetration of the company in India’s tiered towns and the rapidly proliferating mGeneration base in the country.

Talking about their experience with Indian online consumers, Agarwal says that they are not at all different from their global counterparts despite the fact that the e-commerce sector is currently taking baby steps in the country. “Our experience of working around the world has shown one thing—that customers around the world are similar. I am yet to come across a customer who will say that they want a smaller selection or higher prices. Customers around the world always want a vast selection at low prices and a reliable and trustworthy online shopping experience. Indian customers are no different.” The company’s experience with seller companies has also thrown up some interesting insights. The sellers in India display high degrees of motivation, says Agarwal adding, “They are highly entrepre-
neural and have the zeal to grow. Amazon formally launched in India in June 2013 and today a significant percentage of the 10,000+ sellers on the company’s online platform are small and medium enterprises (SMEs).” The company trains the seller community on how to get online and scale their business nationally using the online platform. It also helps them create a digital catalogue that captures the right images and information besides educating them online payment systems and processes.

While the Indian e-commerce space is at a very nascent stage, Agarwal reiterates, it has significant potential for innovation to improve customer experience. “There is scope for multiple formats and players to operate,” he asserts, adding that Amazon’s experience of operating online marketplaces globally has provided it with immense learning. Pointing to the logistics infrastructure that Amazon has built, Agarwal says it is one of the most sophisticated infrastructures ever built to serve sellers and customers globally and adds, “We can learn a lot from that and localise it to India.” Amazon believes that there is no need to solve each of the problems right from the core problem statement, that is to say, reinvent the wheel. “When we look at the technology platform, the website platform, all the way from search technology to personalisation to discovery, a lot of those tool sets can start with what our global platform is and can be localised for India. When you look at the seller platform, with the seller tools to help them run their businesses, they can get the same advantage right from day 1 from the entire suite of tools available at Amazon India, which is being used by 2 million of our sellers globally,” Agarwal says emphasising the Amazon advantage.

Talking about Amazon’s road ahead in India, Agarwal shares, “Customers should expect us to continue to invest in expanding selection in existing categories, launching new categories, enabling more selection and pin codes for next day delivery, and ensuring that we are providing the most convenient and trustworthy shopping experience on PC and mobile. We will also continue to invest on behalf of our sellers so that they have the opportunity to sell more and make more money on the Amazon India marketplace.”

If trade pundits are to be believed, as mentioned earlier, there may be more expansion coming from Amazon in the form of more innovative offerings for sellers and buyers to better prepare the company for the rapidly expanding Indian e-commerce market. For now, here’s to Amazon on its India journey. We raise a toast with Coke Zero (it was launched exclusively on Amazon recently).

—Amit Agarwal
VP & Country Manager
Amazon India

“Sellers in India are highly entrepreneurial and have a zeal to grow...a significant percentage of the 10,000+ sellers on Amazon.in are SMEs.”

INNOVATIONS IN INDIA BY AMAZON

1. Fulfilment by Amazon (FBA) as a service for sellers across India. Sellers store their products in Amazon’s warehouse; Amazon packs and delivers the orders to customers, provides customer service and handles returns. FBA is a pay-as-you-go fulfilment service wherein Amazon takes care of packing, shipping and delivery of the sellers’ products
2. Premium guaranteed delivery services, next day, two days and same day
3. Pick Up stores for customers’ convenience
4. Scheduled delivery for customers’ convenience in Mumbai with the TV category. Shortly to be extended to Thane and Pune
5. Self Service Registration (SSR), a unique seller-specific innovation that provides an opportunity for highly motivated and good sellers—irrespective of their size, location and size of the product catalogue—to start their business on www.amazon.in even in a day, in a self-service manner
6. Amazon Easy Ship, an assisted shipping service that makes it easy for sellers to ship products across India. Sellers benefit from low shipping rates, cash on delivery (COD) and prepaid orders, scheduled pickups, faster delivery and automated shipment tracking. Customers get trackable shipments, COD and prepaid orders and faster and predictable delivery time. Amazon Easy Ship frees sellers of the hassles of figuring out the right shipping provider who can deliver efficiently to a specific location, dropping the package at the collection centres, maintaining the tracking information, etc.
7. Customised, personalised and multilingual Amazon.in Gift Cards that enable customers to buy its products (excludes eBooks)
8. AmazonCart enables customers in India to add products they discover on Twitter from their social network to their Amazon.in shopping carts without leaving Twitter

(Based on interview & secondary research)
The next phase of the biotechnology revolution in India is just around the corner. A journey that began in real earnest in 2007 with targeted interventions from the government is set to see a phase of rapid consolidation of the bioeconomy. Harnessing its native strengths, the country has been at the forefront of cutting edge innovations in the biotechnology industry and is a global leader in generic drugs and active pharmaceutical ingredients. At the end of FY 2013, India’s biotechnology market was estimated at US$ 4.3 billion, up from US$ 530 million in FY 2003, according to a research report by India Brand Equity Foundation.

Biotechnology is an emerging sector globally, and therefore, promises immense opportunity. Realising that biotechnology as a multidisciplinary industry impacts several other related sectors like agriculture and health, and as a corollary, the country’s overall economic development, India has been leveraging its intellectual capital and is today...
among the top 12 biotech destinations in the world, third largest in Asia Pacific in terms of number of companies in the sector and currently holds 2 per cent share of the global biotech industry. The industry’s customer base is growing rapidly and the opportunities in the sector are attracting investments from across the world. India’s reputation as the international hub of scientific and research talent and skilled labour together with its liberal regulatory environment and competitive cost advantages have enhanced its global appeal as the preferred destination for investment. MNCs on the lookout for a world-class manufacturing hub with indigenous research capabilities find all their needs answered here. Indigenously, according to the website of India in Business, Ministry of External Affairs, Government of India, Investment and Technology Promotion (ITP) Division, the industry with more than 400 companies grew three-fold in five years to grow the biotech sector across the range of its size and accounts for 62 per cent of the total revenue to the biotechnology industry. Of the top 10 biotech companies in India (by revenue), six focus on this segment and the remaining four specialise in agri-biotech. It is followed by the bio-services sector that contributes 18 per cent, bio-agri (15 per cent), bio-industrial (4 per cent) and bio-informatics (1 per cent), according to the Association of Biotechnology Led Enterprises (ABLE). Recently, India emerged as the fourth largest country to grow biotech or genetically modified (GM) crops. The fact that farmers in the country planted BT cotton in about 11 million hectares pushed up India’s ranking. In 2013, it was estimated that the global acreages under GM crops is 175.2 million hectares, a growth of about five million hectares over the previous year (Source: India in Business).

**Government Steps In**

It was to tap these opportunities and consolidate the country’s position as a revolutionary biotechnology player and a biotech powerhouse that the Government of India (GoI) in July this year unveiled a slew of policy measures. The announcements have acted as an impetus for industry players who are already mulling ways to take the industry to the next level. In his maiden Budget, Finance Minister Arun Jaitley spelt out the government’s emphasis on a cluster development approach, which promotes synergistic collaborations between academia, researchers and industry. This is set to bring about a paradigm shift in the industry, especially the agri-biotech segment. The government has also announced its decision to develop the nascent Mohali cluster and to invest in new clusters at Kolkata and Pune. The cluster development work will be undertaken in the public-private partnership (PPP) mode.

Two years back in 2012, ABLE, the industry trade body, had come up with a vision plan to harness the latent potential of the vast sector. It announced an ambitious goal of growing India’s bioeconomy to more than US$ 100 billion by 2025. This growth level will bring the biotechnology sector at par with India’s information technology industry. Acknowledging that the target is ambitious, ABLE has reasoned that the industry has been growing at a com-
pounded annual growth rate of around 20 per cent for the past one decade and with the right ecosystem and business environment, the target is achievable. It will require the industry, the government and the academia to work together and harness the country’s strengths in biotechnology. ABLE is confident that with the correct impetus, the industry can grow at an average rate of about 30 per cent a year and achieve the target.

Dr Murali lists out the reasons for the industry’s optimism, “New areas like Big Data, devices, diagnostics, bio fuels and synthetic biology are expected to be the new drivers of growth.” Innovation and intellectual capital being the twin pillars of India’s biotechnology sector, the industry focus is now on leveraging innovation driven high-value opportunities. Collaborations between various stakeholders will be the key and India’s information technology advantage along with skilled manpower is expected to take the industry forward. Namit Goel, Manager Research, Ken Research shares the industry body’s optimism adding, “The growth of biotechnology in the country has accelerated particularly during the last decade due to path-breaking advancements in biology and new technologies that produce large volumes of high quality data.”

According to Ken Research estimates, the biotechnology industry’s revenue has been increasing at a CAGR of 18.4 per cent during the period spanning FY07–FY13 and will increase at a CAGR of 19.5 per cent over the phase FY14–FY18. Goel sees the spillover effect of the growth in Indian biotechnology revenue affecting the bioinformatics sector “because of the increase in demand by the biotechnology sector for software and hardware bioinformatics products and services.” The bioinformatics segment and as an extension the biotechnology sector will benefit from the growth in other related industries as well, says Goel. For instance, the increase in government expenditure on health sector will lead to a growth in the private demand for health care products and services as well as an improvement in infrastructure facilities. “The incremental expenditure on health care by Indians will fuel the growth in the bioinformatics market in India. The pharmaceutical industry will also experience a rise in revenue because of increasing demand for their services. This will also affect the biotechnology market in a positive way,” he explains.

**Renewed Mission of Biotech Strategy II**

- Provide impetus toward fulfilment of the potential for a new understanding of life processes and utilising the knowledge and tools to the advantage of humanity
- Launch a major, well-directed effort backed by significant investment for generation of biotech products, processes and technologies to enhance efficiency, productivity, safety and cost effectiveness of agriculture, food and nutritional security, affordable health and wellness, environmental safety and bio-manufacturing
- Empower, scientifically and technologically, India’s incomparable human resources
- Create a strong infrastructure for research, development and commercialisation for a strong bioeconomy
- Establish India as a world class bio-manufacturing hub for developing and developed markets

Source: National Biotechnology Development Strategy – 2014 (Biotech Strategy II)

In March 2014, DBT came up with Biotech Strategy II – National Biotechnology Development Strategy – 2014, as a continuum to the first strategy paper. Strategy II document has been developed based on the lessons gained from the implementation of Biotech Strategy 2007. The strategy paper released in 2014 notes that while most of the programmes visualised under Biotech Strategy I – 2007 were implemented, it also provides an insight “into what works and what does not in the national context.” The new strategy will now concentrate on “error correction and redesign in consonance with the new higher benchmarks for performance and societal impact.”

Strategy II has evolved a set of 10 guid-
10 Guiding Principles
That Will Drive Biotech Strategy-II, 2014

Building on its “renewed mission” that recognizes biotechnology’s potential as a globally transformative force, the industry works as a complex multi-disciplinary intellectual enterprise along with the life sciences industry and together they offer immense opportunities spanning the fields of general biotech, agriculture biotech, industrial biotech, bioengineering, medical biotech and marine biotech and are also behind the bio-industrial developments taking place in the country. These 10 guiding principles are geared towards taking the industry through a second phase of disruptive growth with equal emphasis on all segments. Strategy II spells out the sectoral priorities of DBT and lays down the roadmap to achieving it.

As is apparent, the government’s policies towards the industry right from the beginning are supportive and enabling. Apart from bioparks to provide a synergistic ecosystem, the government also offers the industry grants and tax incentives. It has adopted a liberal and investment-friendly regulatory regime and permits FDI of up to 100 per cent through the automatic route for the manufacture of drugs and pharmaceuticals. DBT promotes policies geared towards R&D, global cooperation and manufacturing activity in the sector. Additionally, the related ministries like Commerce and Industry, Health and Family Welfare and Agriculture, are also working cohesively to launch new schemes with a policy focus that support new technologies and R&D in the biotechnology sector.

Given the favourable factors, it is not surprising that industry forecasts are positive. According to Karan Chechi, Research Director, TechSci Research, “Heavy public and private investment in the sector in the last decade has been driving the segment forward.” Dr Murali seconds this, quoting *The New England Journal of Medicine* to emphasise India’s untapped potential and investment opportunities, “It (India) has significant academic infrastructure, large population, and global connectivity,” and has a growing need for “R&D investment”.

**The Flag Bearer**

The biopharmaceutical segment is the flag bearer of India’s bioeconomy, as Chechi points out. Explaining India’s preoccupation with its biopharmaceutical sector, he says, “It (India) has the manpower and technological infrastructure in the segment, also, biopharmaceutical is a huge and profitable market.” Confirming the leadership of the bio-pharmaceutical sector, Dr Murali, however, adds that the lower share in total revenue of the other sectors in FY13 points to the growth opportunities in them. In a study commissioned by the Biotechnology Industry Organisation (BIO) and ABLE, *Accelerating Growth: Forging India’s Bioeconomy*, Stephen M Sammut and Daniel S Levine from Burrill Media report that in the year ending March 31, 2013, the biopharmaceutical sector (including vaccines, biosimilars, medical devices, and stem cells) was the biggest revenue earner, generating more than 63 per cent (64 per cent) of the industry’s total revenues in the fiscal. The biopharmaceutical sector with the related bioservices sector
(including contract research, contract manufacturing and outsourced clinical trials), together represented a combined 82 per cent of the industry’s total revenues in fiscal 2013. The sector that began its journey in 1978 with the founding of Biocon, its first biotechnology company, has today scaled up to such an extent that 20 biotechnology companies in India generated almost half of the industry’s total revenue in fiscal 2013. Biocon now employs more than 7,100 employees and its revenue was US$ 344.5 million, amounting to 8 per cent of the total revenue generated by the industry in fiscal 2013 (Source: IBEF).

According to the ABLE report, India’s biopharmaceutical sector leads the globe in the exports of vaccines, producing 60 per cent of the world’s supply. About 15 companies in the country have built more than 50 strong brands and vaccines represent the strongest generators of revenue within the sector. The country supplies more than half of all the vaccines to international organisations, such as the World Health Organisation and the United Nations International Children’s Emergency Fund. “India, long associated with its strengths in generic drugs and active pharmaceutical ingredient manufacturing is also demonstrating its capabilities in creating innovative biologics,” says Dr Murali. Chetti too points to the investments by global players and increasing domestic production and exports of different products in the sector. India is the largest producer of the recombinant Hepatitis B vaccine, while Biocon is the world’s fourth-largest producer of human insulin. Biocon and Wockhardt (another leading Indian pharmaceutical company) together make India the third-largest producer of human insulin in the world. India is also the leading maker of anti-diabetes drugs.

With its ability to both innovate and provide cost-competitive products to meet global demand, in August 2013, India made a breakthrough in the biologics field with the launch of Alzumab, a first-in-class anti-CD6 antibody for the treatment of psoriasis, by Biocon. According to the ABLE report, the discovery is of immense import in the face of the fact that the global market for psoriasis drugs is expected to reach US$ 8 billion by 2016. The drug assumes great significance given its vast range of applicability in treating autoimmune diseases such as rheumatoid arthritis and multiple sclerosis. Needless to say, such innovations are critical to growing India’s bioeconomy.

“The emerging area of biosimilars also promises to increase access and affordability to life-improving and life-saving medicines in India, as well as provide a global growth opportunity for Indian biopharmaceutical companies,” says Dr Murali throwing light on the opportunities in this emerging sector. Indian biopharmaceutical companies already market more than 20 biosimi-
In India. Some leading players in India are exploring the sector big time. They include Biocon, Serum Institute of India, Dr. Reddy’s Lab, Intas, Shantha Biotech, Reliance Life Sciences, Wockhardt, and Cipla. The ABLE report, quoting a February 2013 report from McKinsey puts the range of estimates for the biosimilars market from US$ 2 billion to US$ 20 billion by 2020, saying that the wide range is due the pace and limitations of regulations in participating countries. In India, according to the ABLE report, biosimilar drugs are expected to command higher prices as compared to generic small molecule .

Emphasising the importance of agri-biotech in India, Dr Murali adds, “The government is now looking at the sector to usher in a second green revolution and will boost R&D, opening up a sea of opportunities. This should be good news in the market,” Chechi observes.

According to a PricewaterhouseCoopers (PwC) report, the Indian pharmaceutical market is expected to touch US$ 74 billion sales by 2020 from US$ 11 billion currently, of which the generic drug industry is worth US$ 14 billion a year (Source: Reuters).

**Agri-Biotech Grows Strong**

The agri-biotechnology sector, currently at the second position in the overall Indian biotechnology industry, is growing strong with private and government focus now trained on it. Valued at US$ 602 million in 2013, the segment witnessed a growth of 6 per cent during 2012-13, according to Chechi of TechSci Research. “The government is now looking at the sector to usher in a second green revolution and will boost R&D, opening up a sea of opportunities. This should be good news in the market,” Chechi observes. Emphasising the importance of agri-biotech in India, Dr Murali adds, “The government is now looking at the sector to usher in a second green revolution and will boost R&D, opening up a sea of opportunities. This should be good news in the market,” Chechi observes.
Biotechnology Industry Composition

**Bio-pharmaceutical**
Includes vaccines, original biologics (monoclonal antibodies, vaccines, insulin, therapeutic recombinant proteins), biosimilars, therapeutic or preventive drugs

**Bio-agriculture**
Includes hybrid seeds, bio-fertilisers, transgenic crops

**Bio-informatics**
Software for biotech services, databases, database services

**Bio-services**
Custom manufacturing and CRO

**Bio-industrial**
Industrial enzymes

The crop was developed by a joint venture of Monsanto Holdings Pvt Ltd, a US-based agriculture biotechnology company and Maharashtra Hybrid Seeds Company,” informs Chechi. The agricultural sector in India is also on a strong wicket, growing at over 25 per cent in the last few years. As agri-biotechnology is an interdisciplinary sector, this is good news for the segment as it will help it realise its potential to grow much faster than any other sector in the biotechnology industry.

Goel points to the substantial growth of the agri-biotech sector in the past six years starting from FY07. “Currently, there are an increasing number of projects coming up in this field both in the private as well as the public sector mainly because of the funds coming from the Government of India and the World Bank. The investment trend in the agriculture biotechnology sector has shifted somewhat from purely application-oriented research to a mix of basic and applied research,” he elaborates.

The segment received a boost in the current Budget with the Centre announcing plans for global partnerships to help grow the UNESCO financed International Centre for Genetic Engineering and Biotechnology, Delhi. The centre had been seeking an annual assistance of ₹50 crore (US$8.15 million) from the government to pursue its programmes. India has capabilities to lead in the agri-biotech sector, observes Chechi, adding that it is time to generate more interest in the field to help it attain its potential. “There is an urgent need to clear the confusions on agri-biotechnology for India to reap its benefits. Bio-agricultural products are low cost alternatives which are favoured by the end-consumer. India now needs to work on raising public awareness regarding the consumption of genetically modified food by educating the general public and farmers about bio-agriculture methods,” Chechi observes.

**Emerging Strengths**
Another key emerging sector in India is bioinformatics. “It plays a central role in the development of bio-industries, including biotechnology, pharmaceuticals and medical diagnostics,” Goel says,
highlighting the importance of the sector. It finds application in several other segments comprising medical biotechnology, agriculture biotechnology, animal biotechnology, environmental biotechnology, forensic biotechnology and others. In FY 2013, the bioinformatics sector in India generated nearly 29.6 per cent of its revenue from the medical biotechnology sector, according to Ken Research. That the bioinformatics sector is growing as an independent discipline indicates the rising importance of the sector as fundamental to the growth of other biotechnology verticals. “The industry in India has grown at a CAGR of 12.3 per cent over the period FY07–FY13, a noticeable progress during the last seven years,” observes Goel. The increasing emphasis on bioinformatics in biotechnology is for several reasons but primarily due to its efficacy and cost effectiveness.

“The use of bioinformatics in the medical biotechnology sector is driven by the increasing use of bioinformatics for the drug discovery and development process. To reduce the cost of efficient drugs, the emerging trend in the pharmaceutical industry is to apply bioinformatics tools. It shortens drug development time and ends in huge cost savings. Developing a new drug and taking it to market otherwise, costs a pharmaceutical company nearly US$ 900 million and takes an average of 12 to 14 years,” informs Goel. The ABLE report also points to the growing opportunities in the sector brought about by the convergence of life sciences and information technology, especially with India’s proven prowess in the latter. The demand for bioinformatics is growing rapidly due to proliferation of data flowing from low cost genome sequencing and molecular diagnostics in precision and preventive medicine, due to which more players are entering the field to tap the emerging opportunities. “Bioinformatics is used to study medicinal plants with the help of proteomics, genomics and transcriptomics, which helps in improving the quality of traditional medicinal material. There is also an increasing application of bioinformatics in clinical diagnostics, molecular medicine, gene therapy and reproductive biotechnology,” Goel elaborates. Illustrating various applications of bioinformatics in India through the examples of agriculture biotechnology, medical biotechnology and animal biotechnology, he adds, “In the agriculture biotechnology sector, presently bioinformatics is being used for various purposes including crop yield improvement, pest resistance, improvement of plant resistance against antibiotic stress and to improve the nutritional quality.”

In the field of medical biotechnology, which is “the use of living cells and cell materials for doing research and producing pharmaceutical and diagnostic products”, bioinformatics has a profound impact as biological databases are making it possible for physicians to diagnose diseases and develop strategies for therapy. The growth trend in the medical biotechnology sector during the period FY07–FY13 has been steady. Explaining the overall importance of the bioinformatics sector in the 21st century medical scenario, Goel says, “Over the years, with an increase in infectious diseases, the focus of the pharmaceutical industry in the country has shifted from the trial and error process of drug discovery to a rational structure-based drug design through the use of bioinformatics.”

An important application of bioinformatics is in the field of clinical
diagnosis, which is the identification of the disease based on the signs, symptoms and medical history of the patient. “Bioinformatics is being used by applying histological and clinical data to partition patients of a particular disease group. It clusters patients according to similar behaviour patterns and then uses data mining techniques to analyse each patient with the associated genetic information,” Goel elaborates. India is an emerging market for clinical development and diagnosis and is increasingly being recognised as a clinical trial destination. The opportunities in this space are huge for the country with the current market size estimated at US$ 500 million approximately in 2013. It is further projected that the clinical research organisation market will more than double and cross the US$ 1 billion mark by 2016. In 2011, the market size was US$ 485 million (Source: www.lifescienceworld.in).

India is also becoming a huge opportunity market for stem cell research. The country has taken brisk steps in drug development after successfully decoding the human genome. In the country today, genome sequencing efforts are the new growth area as researchers move from analysing the personal DNA code of individuals to clinical applications, such as treatments tailored to the genetic makeup of diseases in individuals. As regards the field of animal biotechnology, which Goel explains as “the use of science and engineering to modify living organisms”, here too, bioinformatics plays a major role. The goal of animal biotechnology is to make products such as organs, tissues and pharmaceuticals and to develop microorganisms for specific agricultural uses. Animal biotechnology includes the creation of transgenic animals, making animals with a specific inactivated gene and the production of nearly identical animals and infertile aquatic species. Livestock cloning improves animal breeding programmes, allowing farmers to produce healthier offsprings. This sector in India is also on a growth path, clocking a CAGR of 12 per cent during FY07–FY13, according to Ken Research. “A huge amount of data is being generated in the industry because genomes are being sequenced on a large scale,” says Goel. For handling, storage, retrieval and analysis of the data for its use in drug discovery and development, sophisticated bioinformatics tools and services have now become available in the domestic industry. Human genome sequencing models which are cost-effective have also led to an increase in the investments being made in the bioinformatics sector in India.

from low cost genome sequencing and molecular diagnostics in precision and preventive medicine, more players are entering the sphere to tap the emerging opportunities.

Going Forward
For the promising biotech industry to reach its goals and become a leader in every segment, “investments along with outsourcing activities and exports, are key drivers of growth,” emphasises Dr Murali. As of now, FDI up to 100 per cent permitted through the automatic route for manufacturers of drugs and pharmaceuticals has helped this sector attract FDI worth ₹61,340 crore (US$ 12.48 billion) between April 2000 and July 2014 (Source: DIPP). “This (FDI) is bringing in investment. India must not lag behind losing valuable investment in this sector,” says Dr Murali emphasising the crucial investment needs of the biotechnology sector.

Meanwhile, in a bid to achieve India’s biotechnology vision, the industry is engaging more with the stakeholders and the public across the country in order to disseminate information regarding the benefits and relevance of modern biotechnological tools. India is also working hard to tap emerging opportunities in the sector that go beyond biotherapeutics. According to the ABLE report, the country with its reputed labour pool, competitive costs and access to the vast Asian markets has all the right ingredients to strike it big in the bioservices segment. According to it, another emerging segment where India has a distinct competitive advantage is manufacturing. The manufacturing hub of the world in several sectors already, as also the R&D centre, India is poised to replicate its success in the manufacture of small molecule drugs in the sphere of biologics. On the cusp of a major biotechnology revolution, India, the Pharmacy of the World, is shoring up its strengths to become the Biotechnology Basket of the World—Way to go India!

(Based on secondary research and interviews)
Rooms with a View
Heard of an online accommodation specialist for travel agents? Two young brothers with a unique vision tap this space and find they are booked up! roomsXML continues its innovation led growth trajectory with feature rich products adding to its offerings.

BY SANGITA THAKUR VARMA

Two brothers, as different as chalk and cheese, embark on an entrepreneurial journey together. They have a revolutionary concept but they know that selling it would require a unique power of persuasion. They will also need big money. That was in 2007. In 2014, Ruchir Bang, the elder by seven years is totally confident, “This fiscal we will be crossing `225 crore (US$ 36.67 million) in sales.” Currently, the company is valued at about `350 crore in (US$ 24.45 million) annual sales. roomsXML (yes we have got it right), is an online accommodation distribution system exclusively catering to travel companies. Bang explains the technology in lay terms, “To put it simply, roomsXML is an online B2B distribution system offering global hotels and apartments to travel agents and online travel portals.”

Till roomsXML happened, the focus of the travel industry had been more on the end user, that is, the traveller rather than the agents. In fact, the industry questioned the very premise—why would travel agents need such a system? “In 2003, when we saw an opportunity to associate with the travel industry which led to the germination of the idea of our company, we needed funds desperately. But all the investors we met turned down the idea of roomsXML. They felt this model would fail as the travel agent community would eventually die. Nobody believed in our concept except a father and his two sons,” Ruchir reminisces.

Their faith was not misplaced. With its single point focus on offering accommodation to travel agents, the company promised a cost-effective platform that currently has (as on September 18, 2014) on offer a single feed to 77,263 unique properties (3-star and above) across thousands of destinations around the world, with real time access to rooms at the best net rates. The seven year journey of the fledging company, however, hides a saga of dogged determination, unflagging spirit and undying perseverance.
Growing up in a joint family ambience Ruchir and Anuj imbibed what Anuj calls the “embedded influences of family values and business ethics”. There was the Gandhian influence of their grandfather, a technocrat of repute who returned to India post Independence and the fearless enterprising spirit of their father, Prakash Bang, a first generation entrepreneur and the Managing Director of roomsXML, as also the family values of their strict disciplinarian homemaker mother, shaping the destiny of the boys in their formative years. From their grandfather to whom “integrity was above all”, the brothers learnt the ethical business ethos that has helped them build a loyal clientele; from Prakash, their father who “was always a few years ahead of his time”, they inherited their forward looking and innovative streak while their mother with her barrage of queries—“Are they back home on time? Who are their friends? How do they spend time with them? Do they say their morning prayers before leaving home?”—kept the boys in check. As Ruchir accedes, “These may sound amusing, but trust us, they are helping us today.”

Boys will be boys and growing up together must have had its challenges for the Bang brothers, given the considerable age difference. But Ruchir paints quite a different picture of their boyhood. The difference in age, he says, actually worked to their relationship’s advantage. “Instead of typical sibling rivalry, I got due respect from Anuj. He was always keen to discuss things with me…may it be personal or later related to business. We are poles apart when it comes to personal preferences, be it holiday ideas; food, socialising, etc. But thankfully, together we tend to debate and then come to a common conclusion. This works beautifully whilst developing our business. There’s no question as to whose idea won. We always think—will the business win if the idea is implemented?” Given their perfect equation as brothers, the partnership suffered no glitches.

The differences in life’s other choices did not extend to the educational field as both the brothers opted to study commerce and later take diploma in marketing management from Symbiosis Institute of Business Management. It is also surprising that both of them had inherited the same entrepreneurial spirit of their father and instead of opting to study for a degree abroad, they both joined their father. “To be honest, we never really were keen on getting degrees from foreign universities, though we certainly had the option of doing so. We instead chose to join our father (their father was running an wholesale company, Ruchir had acquired an experience of about six years in running a technology online business managing RupeeSaver, a reverse auctioning portal for consumer electronics with his father. The experience helped immensely in building a more sustainable business model for roomsXML, as Ruchir admits candidly, “RupeeSaver’s revenue model was unsustainable and we were drawing heavily into my father’s per...
sonal savings to remain afloat.” Though at its peak the website recorded more than 100,000 subscribers, its heavy cash outflow meant that the father-son duo had to now look for VC funding. Unfortunately that was not to be. “The NASDAQ crashed in the year 2000 as the dotcom bubble burst and the funds backed out. Based on the VC’s promises, my father had invested everything he had and also borrowed from friends and relatives. All was lost. We were back to zero. In fact, the capital inflow was in the negative. We had the option, like many others, to close down.”

For the Bangs though this was certainly not an alternative. It went against the essence of their entrepreneurial spirit. They decided to fight out the phase and sustained their business doing mundane jobs—just to be able to pay the bills. In 2003, they saw an opportunity to associate with the travel industry and thus germinated the idea of an online travel accommodation system—roomsXML. But to give shape to this seedling, the Bangs needed funds. The idea was new and much ahead of its time. The investors they met were sceptical and refused outright to sink their money into something they were sure would fail. But the Bangs’ never say die spirit refused to cave in. “Due to lack of funds, we had to do things one at a time. We soft launched in 2007 in UK. Rest is history,” says Ruchir throwing light on the strategy. Today the company is profitable and cash surplus and the reasons are the business fundamentals that have been woven into its DNA. “We are a zero-debt and zero-investor company. The product development and our marketing have been done purely through internal accruals. We believe in sustainable growth and profitability,’ explains Ruchir.

Despite initial challenges, the company managed to thrive purely on the intrinsic strengths of its product and business model. roomsXML’s expertise as an accommodation specialist for travel agents is based on the XML technology it uses for real-time distribution. “That’s how we came up with the name,” Ruchir explains the intriguing company nomenclature, adding, “We certainly would rank as the pioneers and innovators in this segment. But for this to happen, we have had to invest millions of dollars to build a proprietary system which has features that are unique to us and has a scalable business model.” The product development, which is ongoing, was initially completed between 2003 and 2007. The company gradually entered different markets and is today present in Australia, USA, UK, UAE and India. Ruchir is categorical that it is the quality of services that is of paramount importance to the company. “We are in no rush to be everywhere. It is imperative for us to ensure that the markets that we want to reach can be supported very well and that the business is profitable. We are not driven by a fat top line. We are more concerned about how healthy the bottom line is.”

The company, which draws content from multiple suppliers, offers access to properties via a direct contracting system. Its online CRM product for travel agents lets the latter allow their customers to make extra or special requests. roomsXML provides XML feed and incorporates its inventory onto the travel agent’s website. This solution can also be destination or product specific inventory. As roomsXML collaborates with global technology companies, it provides a ready XML connection for the go live process to its clients at competitive rates. According to Ruchir, the USPs of roomsXML are firstly, the product, with its unique features (there are nine unique benefits); and two, the service standards of the company. “We just delight the travel agents who use us,” he exclaims. In August this year, the accommodation wholesaler launched its B2B mobile interface for travel agents. Talking about the application Ruchir says, “Our mobile interface is one of our many unique features that enable the travel agent to book hotels and apartments on the go. Till date, zillions of mobile applications have been launched for the end traveller, but none for the travel agent.” The roomsXML mobile interface which is extremely functional and quick and offers a dedicated interface for smartphones, will definitely allow agents to exploit the growing mobile channel. For roomsXML too, there seems to be ample headroom for further growth with innovation and quality services as its calling card, especially on the back of a thriving global tourism industry. The UNWTO World Tourism Barometer has forecast that global international arrivals will increase by 4 per cent to 4.5 per cent in 2014. India’s tourism sector too is slated to grow by 7.3 per cent in 2014, according to the World Travel & Tourism Council. ■
Growing awareness regarding the need for oral health care coupled with increasing disposable incomes in India has resulted in the prescription for a perfect smile for the country’s oral health care industry. Dental practices are flourishing not only in India’s metros and mega cities but in the tiered cities and the rural countryside too, as regular dental check-ups have become integrated into lifestyles. Demand for restorative dental measures is also soaring as is for cosmetic dentistry procedures like tooth reshaping and whitening. Universities, both government and private, have mushroomed all over the country to groom cadres of dental professionals to fulfil the burgeoning demand.

**Burgeoning Practices**

According to an Insian Dental Association (IDA) report titled *Health care and Dental Industry in India*, today, upwards of 180,000 dentists including 35,000 specialists serve 1.2 billion Indians through 125,000 clinics and 5,000 dental labs. Given the predominantly urban spread of these practices, the current dentist population is centred in metros and semi urban areas. But with 25,000 graduates and 5,000 specialists added to the lists...
annually, their density in rural areas is on the rise.

By 2018, India’s count of dentists is expected to grow to 300,000 and of dental specialists to 50,000. With 99 per cent of consultations taking place in private clinics, it comes as no surprise that 12,000 to 15,000 practices are mushrooming every year. Also, whereas most dentists traditionally operated from solo practices, now many private dental clinic chains have upped shutters to ride the growth wave. A few of these are: Apollo White Dental, Clove Dental, Vasan Dental Care, Smilekraft, Axis Dental, MyDentist and Narayana Hrudayalaya Dental.

Standing Apart
To stand apart, the new chains are creating strong unique selling propositions. MyDentist is currently the largest dental chain in the country with 91 operational centres and 350 doctors and 150 consultants on its rolls. In four years of operations, this chain of owned clinics has treated 250,000 patients. According to the CEO Vikram Vora, “The chain has positioned itself as curative clinic for the middle class and upper middle class. By targeting people who would walk into a dental clinic only as a last resort, we are promoting the concept of tooth preservation. We steer clear of cosmetic procedures. We offer the same pricing across the chain, and this attracts both Indian as well as some overseas patients.”

Clove Dental has launched its state-of-the-art Clove Laboratory. There’s plenty of scope for more dental laboratories, and integrating these with quality dental clinic chains makes sound business sense. Interestingly, Star Dental India, the company behind the Clove brand, is a venture of Star Dental of the USA. The company plans to launch 300 super-specialty dental clinics in India by 2017.

Some other noteworthy foreign investors in the dental services industry are Swiss Smile, which has a 50-50 joint venture with Global Tech Park; Dentistree, which has partnered with Qualitas Medical Group; and the Government of Singapore Investment Corporation, which has invested US$ 100 million in Vasan Health Care.

Ambience is a top priority for all the chains. Apollo White Dental boasts of spa-like interiors and offers patients frills like Wi-Fi, refreshing Jacuzzis, culinary delights and complimentary massages and manicures or pedicures. Integrating dental treatment with wellness services is a smart tactic to leverage the growing dental tourism industry.

Dental Tourism
Branded chains cater to premium segments of domestic patients as well as to overseas patients seeking quality care. Dental tourism accounts for 10 per cent of the medical tourism industry and 10 per cent of the oral care market. It is expected to grow at a healthy CAGR of 30 per cent over the next few years.

According to Amit Mookim, Partner and Head, Health care Practice, KPMG in India, “The biggest positive is that the cost of comparable dental care in India is about a tenth of the care in developed western countries. Dentists charge anywhere between US$ 300 and US$ 400 for a dental filling in US and Europe while the same costs between US$ 20 and US$ 40 in India. Since dental treatments are typically not covered by insurance, patients are always on the lookout for quality care at a lower cost.”

Another positive is government support for medical tourism. After the Goa Tourism Board started to promote medical tourism in 2008, dental clinics in the state began to see greater interest and attract greater numbers of patients from overseas. “Goa is now regarded as one of the dental tourism hubs of the country. It helps that travellers for dental care aren’t ‘seriously ill’ and can additionally enjoy nearby tourist attractions,” observes Mookim.

Allied Opportunities
A direct outcome of the growth in dental care services is a dynamic market for dental consumables, dental clinic furniture and dental equipment and instru-
mants. Growing at 6 per cent annually, the Indian dental equipment industry is estimated to touch US$ 16.43 million this year. The market for dental care services, on the other hand, is expected to be worth US$ 1.6 billion (Source: IDA Report). The forecast for the industry is very optimistic. “We could see 20 to 30 per cent growth in the near future,” says Professor Mahesh Verma, President, Indian Dental Association (National) & Director – Principal, Maulana Azad Institute of Dental Sciences.

Burgeoning opportunities have attracted a number of multinational companies offering dental equipment, instruments and materials. A few of these are Kavo, GC, Ivoclar Vivadent, Dentsply, 3M, Nobel Biocare, Mecktron, Sirona, Aceton, Ultradent, Coltene, Voco, S S White, Shofu, Dental Lab India, Kerr Corporation, Wipro GE Medical Systems, etc. Their entry, especially of those players who are establishing manufacturing centres in India augurs well for the industry because as much as 65 per cent of the country’s annual need for dental equipment and instruments such as drills, scalars and hand pieces is currently met by imports from western European countries, USA, Japan and China. “Technological inflows in dental material sciences, dental equipment and information technology and their local manufacture are boosting the Indian economy and improving local access to them,” says Dr Verma.

Stemming the net import trend, India is gradually becoming a manufacturing hub and source of dental furniture, dental hygiene preparations and surgical wound closures for countries such as Nepal, Bangladesh, Sri Lanka, Pakistan, the African continent and the Middle East. It helps that the government has permitted 100 per cent foreign direct investment in health and medical services under the automatic route, higher depreciation on medical equipment and income tax exemptions for five years to hospitals in rural areas and mini metros. It has also lowered customs duty on medical, surgical and dental equipment.

Oral Hygiene
Growing at a CAGR of 14.4 per cent over the last five years, the Indian oral care market is expected to touch US$ 1.8 billion this year (Source: IDA & Ken Research). Toothpastes, toothbrushes, toothpowders and mouthwashes, in that order, are the four major pillars of the industry. Dental flosses and oral care chewing gum account for thin slices of the pie. Increasing awareness about good dental hygiene practices is vital to penetrating the lower strata of the market populated by consumers who use traditional twigs, neem and other homemade substances for oral care. The good news is that smart marketing strategies are paying handsome returns. According to Praveen Jaipuriar, Marketing Head, Oral Care, Dabur India Ltd, “The Indian toothpaste market is witnessing a marked shift in consumer behaviour, which in turn is driving growth in this highly penetrated category. Non-dentriﬁce users are converting into dentriﬁce product users—and many consumers are opting for natural products. The next step to accelerate growth is to boost awareness of the importance of night brushing.” Roping in local distributors who know the community to build a strong distribution network, getting local retailers to endorse products and influence consumers and packaging products in smaller affordable sizes are also helping boost sales.

Niche Opportunities
Major FMCG players Colgate Palmolive, Hindustan Unilever Limited and Dabur together enjoy more than 85 per cent of the oral care market, both by volume and value. They are wooing urban consumers with a more differentiated niche product portfolio including oral products targeting special needs like gum health, bad breath, youth or geriatric needs and premium products. Colgate Palmolive

“...we are promoting the concept of tooth preservation. We steer clear of cosmetic procedures.”  
—Vikram Vora, CEO
MyDentist

“Technological inflows in dental material sciences, equipment and IT... are boosting the economy...and improving access...”  
—Prof Mahesh Varma, President
Indian Dental Association (National)
has launched sensitive mouthwashes for sensitive teeth, Colgate Total Pro Gum Health Toothpaste for better gum health, Colgate Total 12 to offer longer protection against germs, Colgate Activ Salt offering a dash of salt and Colgate Visible White for those looking for whiter teeth and brighter smiles. HUL pitches Pepsodent as a family brand and Close Up as a youth product. Dabur India Ltd is successfully straddling the economy, popular and premium segments of the toothpaste market with Babool variants, Dabur Red paste and Meswak respectively that are popular with kids being made of natural ingredients. Other players like Colgate and Acquafresh offer dedicated lines in toothpastes and toothbrushes for kids. New players have also gained share and built popular brands by capitalising on niche opportunities. Consider Glaxosmithkline’s Sensodyne, Future Group’s Sach brand of toothpastes and Vicco’s Vicco Vajradanti line of products. With Listerine and AM PM, Johnson and Johnson and Elder Health Care respectively, have successfully tapped the premium end of the mouth rinse segment. On the back of continuing innovation and smart marketing strategies, oral care is expected to expand at a value CAGR of 9 per cent to reach ₹13,100 crore (US$ 2.14 billion) by 2018 (Source: Euromonitor). Even as foreigners make a beeline for India for their oral health care requirements, more and more Indian consumers too are availing a wide range of dental care products and services. As the market matures going forward, both the industry players as well as allied industries, have enough reasons to celebrate.

Top of the Line

India’s BPO industry is in sync with global demands and has maintained its winning edge. BY SANJAY K OJHA

The business process outsourcing (BPO) industry in India has charted a robust growth trajectory since its inception in the mid-1990s. The preferred profession of the youth for its high pay packets at that time, the sector, which began with call centres has today diversified into specialised services like accounting, legal process outsourcing and medical transcriptions, etc., positioning itself as one of the core sectors providing growth momentum to the economy.

Elango R, Chief Human Resources Officer and Head of Emerging Geographies Business Unit, Mphasis, sums up the importance of the sector succinctly saying, “The BPO industry is the largest private sector employer and one of India’s key strengths that enabled it to become the world leader with its talent pool of 3.1 million employees. While India maintains its leadership position in the global IT-BPO arena, the industry continues to evolve and mature in response to global demands.”

The Indian IT-BPO industry sustained its growth trajectory during FY2013 and in FY2014, industry body Nasscom expects the sector to clock export revenues of US$ 84.87 billion maintaining a growth rate of 12-14 per cent. It forecasts that domestic revenues will also grow at a rate of 13-15 per...
The BPO sector is expected to reach ₹1,180–1,200 billion (US$ 19.23–19.56 billion) in fiscal 2014. The sector has been hailed for its unparalleled growth in the past decade, which occurred due to the use of advanced technology, best software and high-end infrastructure in order to provide high-quality customer support services. The pace of growth has been catalysed with privatisation and progressive reduction in tariffs of internet services, telecom, cellular and paging services. Besides the presence of IT giants, captive players and third-party service providers have further added to the sector’s growth in India. “The diversity of the country’s ecosystem, large base of MNCs and global in-house centres are a few dominant factors favouring the rise of business process management (BPM) services in India. Other factors like low cost skilled and agile work force, capacity to serve multiple countries in multiple languages, quick adoption of transformational and impacting solutions to deliver business effectively, favourable policies and best governance frameworks have put India in a dominant position in the global BPO services market,” says Siddhartha Singh, Senior Vice President and Head of BPO, NIIT Technologies, commenting on the reasons for India’s distinct global advantages in the sector. According to him, knowledge services, which is the fastest growing segment, is likely to grow over 15 per cent year on year. Indian players have pioneered outsourcing in marketing data analytics and legal services.

Advantage India

The industry which bloomed in India for cost advantages, over time became the hub of a skilled talent pool and state of the art infrastructure employing process and technology innovation. It earned the respect of the global community as Indian BPO providers steadily acquired more knowledge about the business processes of their global clients when compared to the clients’ own employees. The industry now consults clients on how to structure operations to be more efficient and customer centric.

Today, the Indian BPO providers continue to maintain optimum levels of cost efficiencies through process improvement frameworks following best practices and managing cost escalations by adopting various strategic imperatives including delivery excellence and technology enablement, which help it to maintain a lead over its competitors in Asian countries like Malaysia, Philippines, China, etc., and several east European countries. “India has an edge over other countries primarily due to its technically skilled workforce, cost effectiveness, superior competency, business risk mitigation, 24-hour service and economies of scale,” Singh sums up the country’s many advantages.

Relevant Rebranding

The sector in recent years has successfully diversified from primarily voice-based services to delivering specialised services which include setting up of multi-delivery centres, vertical offerings and end-to-end solutions using cloud, big data and analytics. It is facilitating services in human resources, recruitment and legal processes besides banking and insurance. Due to its expanding profile, the BPO sector is increasingly being called the business process management (BPM) industry. Nasscom for one has been at the forefront of this rebranding exercise for the industry. “Witnessing the industry’s exceptional performance, Nasscom
rechristened its annual event this year as he explains. In line with the transformation, executed from our BPM facilities in services on our IT infrastructure with creative designs being institutions in the country too have adapted themselves to the affiliations with institutes and universities. The educational skilled workforce through in-house training programmes and oriented sector in order to attract more talent.

For a media client in the U enables us to offer complete end-to-end integrated services. business contributes to 5 per cent of revenues and essentially end-to-end solution involving both IT and BPM. Our BPM to engage with service providers to deliver an integrated effectiveness and value. “It is not uncommon now for clients benefits through process restructuring while achieving cost and the government to create a “common long-term sustainable” growth perspective and work seamlessly towards achieving it. “We applaud the government for their support and commitment to our sector,” concludes Gupta.

The growth of the IT-BPM sector in India has been truly impressive. But the sector can expect an even better future with the government extending its support to the industry. According to Nasscom, the first US$ 100 billion landmark for the sector can be attributed to the cost and quality advantage. But the next US$ 100 billion will be achieved with a combination of higher value services and increasing non-linear growth. The IT-BPM industry is focussing on greater efficiencies, verticalised structures, geographical presence, IP-based solutions and increased collaboration across all stakeholders to catalyse growth and consolidate India’s position as the world’s most preferred outsourcing destination. ■

(Based on secondary research and interviews)

Going Forward
In recent years, the Middle East is emerging as the next big destination after the US and the UK for Indian BPO firms, especially in sectors like oil and gas, banking, insurance, telecom, engineering, finance and accounts. Last year, TCS won a deal from a bank in the United Arab Emirates (UAE) to manage its core business and Serco Global Services received a four-year contract to provide services to over 50 government departments in the country. Wipro has bagged the highest number of deals from the UAE since signing an Arabia trading agreement in March 2013, which made the IT-BPO company a preferred partner for outsourcing from the Middle East region. Cognizant has bagged a contract from the Saudi Electric Company for SAP implementation. The industry is now working on stability and catalysing growth momentum in the interiors. “As far as infrastructure support is concerned, Tier I locations are getting saturated and there is a need to nurture and bring into operation Tier II and III cities. The Government of India in partnership with private infrastructure corporations is working on bringing all around development and providing robust infrastructure across the nation,” Elango informs. Gupta seconds his view adding that it is imperative for the industry, Nasscom and the government to create a “common long-term sustainable” growth perspective and work seamlessly towards achieving it. “We applaud the government for their support and commitment to our sector,” concludes Gupta.

The shift according to her is more of a development rather than a challenge as employers are finding newer channels to spot the right talent for the right job. “In fact, in some cases, we have seen many BPM employers hiring a domain expert, one who has been working for many years in a particular industry and has a sound knowledge about the industry, to service a customer in the same industry. Nasscom believes that this trend will pick up in the near future and ‘skills’ that appear as a challenge right now will become one of the strengths for the industry,” Gupta added. She hopes that India will continue to be the hub of the global BPM sourcing industry, developing best practices as social media, enterprise mobility and other new technologies are set to drive demand for specialised services.

According to Singh, the need for this change came due to the tectonic shift in clients’ expectations. Today, the clients are demanding new ideas which will add value to their business and the goal of BPM is to enable transformational benefits through process restructuring while achieving cost effectiveness and value. “It is not uncommon now for clients to engage with service providers to deliver an integrated end-to-end solution involving both IT and BPM. Our BPM business contributes to 5 per cent of revenues and essentially enables us to offer complete end-to-end integrated services. For a media client in the US, for example, we provide ad services on our IT infrastructure with creative designs being executed from our BPM facilities in Noida and Manila,” he explains. In line with the transformation, Nasscom rechristened its annual event this year as Nasscom BPM Summit and has been spearheading the “image makeover” to represent the ever growing BPM sector as a stable and career-oriented sector in order to attract more talent.

The industry is making substantial efforts to build a highly skilled workforce through in-house training programmes and affiliations with institutes and universities. The educational institutions in the country too have adapted themselves to the changing trends. The courses being offered are geared towards specialisations that provide the right tools to young graduates to enable them to take up skilled positions.
India Unleashes its Manufacturing Lion
Invites the world to Come Make in India, showcases its manufacturing potential.  

by Binita Singh

On August 15, 2014, Prime Minister Narendra Modi from the ramparts of India’s historic Red Fort gave a clarion call to the global manufacturing community to “Come Make in India”. On September 24, the initiative was launched officially and webcast worldwide drawing enthusiastic participation from the global investor community. The manufacturing opportunity that India offers is spanning the entire gamut of industries.

By unrolling the red carpet for manufacturers across the world, India has also won the goodwill of the industry. The Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce, Government of India has taken the initiative a step further by defining the three pillars for making India the preferred manufacturing hub of the world—improving business environment, enabling manufacturing and opening up foreign direct investment (FDI) in key sectors. Budget 2014 has also provided an additional fillip to the sector with a series of policy measures.

Devendra Surana, Managing Director, Bhagyanagar India, a Surana Group manufacturing enterprise, sees “great days ahead for manufacturing”, observing, “The essential ingredients are all there, probably at the best combination in the last 70 years. Today, we have the potential for a huge demand simply because our base is very low.” According to him, the Indian manufacturing sector requires to grow at 11 per cent per annum for the next 20 years to achieve its potential. “We have the human resources to fulfil this requirement,” he states, reasoning, “The availability of skilled manpower at a relatively low cost is a competitive benefit which will last for at least two decades, long enough to fulfil our manufacturing potential.”

Economy’s Bellwether
The optimism and the cheer that the PM’s expression of intent to boost manufacturing has brought to the Indian economy can be understood from the importance of the manufacturing sector to the economy’s overall health. Manufacturing is not a standalone activity but by its very nature has interwoven linkages with other important sectors and straddles a vast section of the economy. For instance, 14 major sectors that involve large-scale
manufacturing are textiles, capital goods, metals, chemicals, petrochemicals, cement, electronics, automotive, leather and footwear, machine tools, food processing, paper and tyres. It can well be understood how the health or sickness of manufacturing sector has a direct bearing on the overall GDP of a country.

According to a PwC-FICCI report titled India Manufacturing Barometer – Taking the Pulse, published in July 2013, manufacturing’s share of total GDP must be 25 per cent as this is integral to the inclusive growth of the economy. According to experts, primary sectors in India can provide jobs but can’t promise growth and tertiary sectors while promising growth are poor employers. It is the manufacturing sector alone that at optimal levels single-handedly fulfils an economy’s promises—it creates employment, boosts exports, strengthens the financial sector and attracts foreign investments. India’s services sector, mainly the IT industry, financial sector and other skill intensive industries, has been the largest contributor to the economy. However, India’s manufacturing prowess too commands worldwide respect and the Made in India label is a certification of quality and a hallmark of innovation.

The manufacturing industry is in optimistic mood as evident from the responses of manufacturing companies surveyed for the PwC-FICCI Report. More than 50 per cent expect their revenues to grow at higher than 10 per cent over the year 2014 and profit margins to also improve. In signs of the increased anticipated activity in the sector, HR experts are forecasting an uptick in hiring across grades, right from the factory floor, to tools and machine operators, to front office to managers, experts and senior manager ranks.

**Targeted Measures**

The National Manufacturing Policy (NMP) announced by the Government of India in 2013 is a comprehensive document that envisages promotion of industrial production, employment generation through manufacturing, creation of infrastructure to aid manufacturing and promotion of investment in the sector. The primary objective of the NMP is to increase the share of manufacturing in GDP from the current level of 16 per cent to 25 per cent by 2022. It also seeks to create 100 million jobs and make rural youth employable through skilling.

Another major focus of the policy is the recognition and promotion of the role of technology in manufacturing. Technology plays a primary role in driving innovation and improving productivity, especially in the micro, small and medium enterprises (MSME). The government under the 12th Five Year Plan has outlined policy measures to meet the specific IT requirements of the industry. The prioritised areas of investment for manufacturing companies in India in FY14, according to the PwC-FICCI report, are new product or service introductions, R&D and facilities expansion, pointing to the importance of embedding technology into the scheme of manufacturing activities.

**Objectives of the New NMP**

The new National Manufacturing Policy has the objective of enhancing the share of manufacturing in GDP to 25 per cent within a decade and creating 100 million jobs. Key policy instruments for achieving it are:

a) Establishment of National Investment and Manufacturing Zones (NIMZs)—greenfield integrated industrial townships
b) Trunk infrastructure to be financed by the Centre, while a Special Purpose Vehicle (SPV) will develop the zone infrastructure in PPP mode
c) NIMZ will be managed by SPV
d) Proposals to improve access to finance for SMES in the sector
f) The proposals apply to manufacturing industry wherever the industry is able to organise itself into clusters and adopt a model of self-regulation

(Source: DIPP, Government of India)

The government has made conscious policy efforts to focus on improving the IP system, ensuring availability of skilled labour by establishing institutions for technology, research and other educational institutions and facilitating access to critical raw materials. This has been done to provide large manufacturing industries documentation, creation of IP and the regulatory framework related to technology to leverage IT and enable them to compete on the global platform. The industry is also taking giant steps to catalyse business transformation through technology adoption initiatives. As per PwC’s 17th Annual Global CEO Survey, data management and analytics are at the top of the list of IT needs of manufacturing CEOs worldwide.

With domestic manufacturing players looking beyond the country’s shores to expand their footprints, advanced supply chain solutions become imperative. The manifold benefits of such dedicated infrastructure include enhanced real time forecasting abilities, ability to prioritise production and despatches, smart inventory management, optimisation of production capacities and real time information on raw material availability to avoid last minute glitches at the time of rush orders.

The government is promoting dedicated industrial corridors to facilitate supply chains under the NMP with the proactive partnership of state governments. The Policy is a focussed instrument for promoting the growth of manufacturing in India. Meanwhile, manufacturers are mulling various options like investing in new products and services, R&D, facilities expansion or in a mix of these to take their businesses to a global level. The National Investment and Manufacturing Zones (NIMZs) being developed as greenfield integrated industrial townships with state-of-the-art infrastructure, clean and energy efficient technologies, and requisite social infrastructure by the government will boost manufacturing activity on a wide scale. The National Investment Board, which enables quick decisions and ensures fast clearances of
A mega push to the country’s manufacturing sector is in the form of the Delhi Mumbai Industrial Corridor (DMIC). The high capacity 1,483 km long western Dedicated Railway Freight Corridor (DFC), is being developed as the backbone of the sector and as a global manufacturing and investment destination. Under the DMIC project, futuristic industrial cities involving an estimated investment of around US$ 90-100 billion over the next 30 years are being built, according to the Year End Review of the Department of Industrial Policy and Promotion released by the Press Information Bureau in December 2011.

The DMIC, a flagship project, will enhance India’s industrial capacity, manufacturing and transportation infrastructure, enriching the country’s attractiveness as a global manufacturing and trading hub. Covering six states—Haryana, UP, Rajasthan, Madhya Pradesh, Maharashtra and Gujarat—it accounts for 43 per cent of the national GDP, over 50 per cent of industrial production and exports and 40 per cent of the total workforce. According to industry estimates, the developments under the project will offer employment opportunities to over three million people. Though still in its nascent stage, the DMIC has exhibited immense promise for catalysing growth in manufacturing, according to an April 2014 report by the US-India Business Council (USIBC) aimed at encouraging American companies to invest in the infrastructure project. The ambitious project will create a world class industrial zone boosting major expansion of infrastructure for industry such as industrial clusters, rail, road, port and air connectivity along the corridor. Home to around 20 per cent of the country’s population, the region supports 50 per cent of the agricultural produce and 60 per cent of total exports, says USIBC. The DMIC will usher a transparent regime by removing common bottlenecks, the USIBC observed, adding that given the comparatively high industrial output of the DMIC member states, it is poised to become the engine of the Indian economy.

Global Hub
In September this year, Maplecroft, UK’s risk analyst, ranked India as No.1 in terms of investment opportunities for businesses. India’s attractiveness as a global destination for establishing low cost manufacturing bases by MNCs is on the rise given its favourable policy climate, economic stability, R&D capability, availability of a young and skilled workforce and raw materials among other things. For MNCs, what adds to India’s attractiveness is the fact that it allows them to scale up operations. MNCs also head to India for superior engineering design, prototype development and technology expertise. In recognition of its rising manufacturing attractiveness across the globe, India was ranked fourth in the 2013 Global Manufacturing Competitive Index report brought out by Deloitte Touche Tohmatsu Limited (DTTL). It also forecast that five years down the line, India will be the No.2 country for manufacturing. According to Surana, “India has one of the biggest demands based on the huge population and the requirement for infrastructure development. On the other hand India also has a huge amount of resources, both human and natural that add to its attractiveness.”

Rising domestic demand coupled with exports from the country, make India a viable manufacturing hub. Exports saw an upswing in 2014—special economic zone (SEZ) exports stood at ₹121.637 crore (US$ 19.83 billion) in the first quarter of 2014-15, up by 7.36 per cent over the corresponding period last fiscal and the total exports in 2013-14 from SEZs stood at ₹494.077 crore (US$ 80.46 billion). Total exports of India grew by 4.1 per cent to US$ 312.6 billion in 2013-14. While the country lays the foundation to consolidate its manufacturing gains, the launch of Make in India initiative webcast by more than 100 Indian diplomatic outposts all over the world along with simultaneous business outreach programmes, drew enthusiastic participation from the investor community, especially in China, Singapore, Malaysia, Indonesia and Thailand. India’s manufacturing lion has been unleashed.

By 2018 India to be No.2 for manufacturing.
(Source: DTTL)

Seven Investment Regions under DMIC will be NIMZs as under:
- Ahmedabad-Dholera Investment Region, Gujarat (900 sq km)
- Shendra-Bidkin Industrial Park city near Aurangabad, Maharashtra (84 sq km)
- Manesar-Bawal Investment Region, Haryana (380 sq km)
- Khushkhera-Bhiwadi-Neemrana Investment Region, Rajasthan (150 sq km)
- Pithampur-Dhar-Mhow Investment Region, Madhya Pradesh (370 sq km)
- Dadri-Noida-Ghaziabad Investment Region, Uttar Pradesh (250 sq km)
- Dighi Port Industrial Area, Maharashtra (230 sq km)

(Source: DIPP, Government of India)
SPREADING PROSPERITY
India exports pumps to almost 100 countries.

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Dhanuka Agritech Limited has a truly inspiring success story. A manufacturer of a wide range of agrochemicals, it has scripted a successful entrepreneurial journey spanning 34 years after taking over a sick unit—Northern Minerals Limited in 1980—which was on the verge of closure. Primarily a marketing company, today it produces and markets a wide range of products spread over 80 brands, which include herbicides, insecticides, fungicides and miticides. The company’s marketing network spreads across the country and includes more than 7,000 distributors selling to over 75,000 retailers in its web, who together, reach out to more than 10 million farmers. The journey upward was, of course, fraught with numerous challenges, as reveals M K...
Dhanuka, Managing Director, DAL. “In 1980, getting finance from banks was a challenge because we were a small and sick unit. Secondly, big players and MNCs were dominating the market. Competing with these companies posed a big challenge for us. We began with building our distributor network in Punjab, Haryana and other states. When we had acquired the sick unit, it had only two-three product licences. Gradually, we added a number of molecules in our portfolio and that way we began getting licences,” he said.

The agrochemicals company, whose revenue in FY14 stood at ₹743.20 crore, achieved net sales of ₹738.41 crore in FY13-14, according to the unaudited financial results for the quarter ended June 2014. In April, the company had reported improved performance for the first nine months of FY13-14 and revenues had grown from ₹451.13 crore (US$ 73.43 million) to ₹586.53 crore (US$ 95.46 million), a growth of 30.01 per cent year-on-year in the period. DAL has found a place thrice among ‘Asia’s 200 Best Under A Billion”—a list published by Forbes to highlight 200 high-performing Asia Pacific companies with revenues under US$ 1 billion. The MD credits the company’s ever-increasing business to its relationships with distributors, employees and other stakeholders. “We have learnt certain values from our forefathers and one of them is to believe in relationships. The distributors who were added in 1980 are still connected with the company. In addition, many employees have been working with us for the last 15-30 years. We had our first MNC tie-up in 1992 with DuPont of USA when it was not even present in India’s pesticide market. Now, we have close ties with eight MNCs. This is the kind of bonding that the company enjoys with all its stakeholders,” says Dhanuka. The company has international technical tie-ups with four US, five Japanese and two European companies.

Ensuring Quality
As Dhanuka’s target customers are primarily farmers, the company relies on intensive and innovative marketing strategies, initiatives to enhance awareness in farmers about agrochemicals and the diverse product range available to penetrate into the interiors of India. The agrochemicals enterprise keeps on adding new products every year through its international collaborations and is continuously on the lookout to bring in the latest technology to Indian farmers. “Our philosophy is simple. As we cannot do much of advanced R&D in-house, we prefer tie-ups with MNCs that are coming up with new eco-friendly molecules. We are the only Indian company with so many MNC tie-ups and we are launching new products every year. We are set to launch two molecules this year too,” adds Dhanuka. DAL has applied for a licence for

### Dhanuka Plants
- **Gurgaon:** In 1980, Dhanuka acquired a production facility that was established by Northern Minerals Limited in 1960
- **Udhampur, J&K:** State-of-the-art manufacturing unit with zero water discharge facility; Online monitoring of quality conforming to highest standards
- **Sanand, Gujarat:** Second largest installed capacity granule facility in India
- **Keshwana, Rajasthan:** Manufacturing unit for plant-protection chemicals to begin operation by year-end
- **Dahej, Gujarat:** With 37 acres of land available, DAL proposes to expand its production facility
Dhanuka, a wholly-owned subsidiary company for its agrochemicals business in Bangladesh. Dhanuka’s USP is the wide range of products in its portfolio comprising more than 80 brands.

The company is committed towards delivering quality products and has an R&D centre at Gurgaon, which is certified by the Ministry of Science and Technology and National Accreditation Board for Laboratories (NABL). Dhanuka’s facilities are equipped with the latest technologies to check not just the quality of its products, but also to extensively ensure that all the packaging material used conform to the highest global standards. With the assistance of around 30 agricultural scientists, the R&D unit at Gurgaon addresses issues of market forecasting, and evaluates pesticide requirement in the light of evolving farming practices, product identification, on-farm product evaluation, etc.

**Paying Partnerships**

Besides ensuring quality and innovation in its product portfolio, the company has shown exemplary commitment to the welfare and development of the farming community. In a first, Dhanuka Group entered into a public private partnership (PPP) with the Madhya Pradesh government in 2001 for agricultural extension in Hoshangabad district. The company was involved in facilitating a soil and water testing laboratory, advisory services, training of farmers, technology demonstration, field visits, etc., which helped in enhancing the wheat and soya bean productivity in the district. The company was involved in facilitating a soil and water testing laboratory, advisory services, training of farmers, technology demonstration, field visits, etc., which helped in enhancing the wheat and soya bean productivity in the district. The group also entered into a PPP with Krishi Vigyan Kendra (KVK) in Chomu of Jaipur for technology assessment and refinement, product demonstrations and training of pesticide dealers and farmers on judicious use of pesticides.

Under the Soil Health and Nutrition Project of the central government, Dhanuka was provided a mobile soil testing van in February 2011 by the Rajasthan government. Recently, the company came into partnership with the West Bengal government for demonstration, training and interface visits for seed treatment and weed control to enhance the productivity of groundnut in East Midnapore district.

**Social Responsibility**

As Dhanuka’s production involves emission of hazardous chemicals, the company follows best industry standards for pollution control. All its units are equipped with effluent treatment plants to ensure minimum release of hazardous chemicals into the environment. DAL is also planning to use the most advanced technologies for controlling all forms of pollution at its upcoming manufacturing facility in Rajasthan. For the last several years, Dhanuka has been focusing on conserving and saving water. On World Water Day on March 22 this year, Dhanuka organised a special training programme for water conservation at the rural level. To incentivise its employees, the company announced a reward of ₹5,000 (US$82.18) for its employees and dealers who invested in rainwater harvesting at their homes. “The company has employed 1,500 BSc graduates as Dhanuka Doctors to deliver the message of modern farming to the villagers at their doorsteps and on their farms,” says Dhanuka. Apart from this it has a number of other social initiatives running for employees and the underserved sections of society.

Dhanuka is working hard to capitalise on the growing agrochemicals opportunity in the country. It has introduced new products—Danfuron, Defend, Maxyl, Protocol and Media Super—in the current fiscal and is expecting good growth from these products. Six new first-time registrations and exclusive products are in pipeline and the company expects to launch two new products every fiscal. Innovation and quality remain the cornerstones of its strategy going forward.

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**₹743.20 crore**

Dhanuka Agritech Revenue in FY14

*Source: Company Report*

“...we prefer tie-ups with MNCs coming up with new eco-friendly molecules. We are launching new products every year... We are set to launch two molecules this year.”

—Mahendra Kumar Dhanuka

Managing Director

Dhanuka Agritech Limited
WORLD’S SPICE BOWL
India is the world’s largest producer and exporter of spices.
Laying the Grid for Smart Energy

An IIT Bombay PhD scholar submits a research paper that makes a power hungry globe sit up in attention. His innovation, km-tech, turns smart grids smarter.

BY SANGITA THAKUR VARMA

An innovation or invention by definition is something that is new, revolutionary, creative and original. But when someone ventures into a field in which no one else has earlier imagined any such accomplishment possible, a high level of skepticism can be expected.

VSK Murthy Balijepalli met a similar treatment when he presented his PhD research proposal to the panel at Indian Institute of Technology, Bombay (IIT Bombay). They questioned the functionality of his idea.

The young scholar, who was much ahead of his time, was undeterred. He went ahead and published his paper at the end of the term titled—Towards Indian Smart Grids. It was Balijepalli’s concern about the power losses during distribution that had him mulling the idea of such a research. The field research served to sustain it further and industry interactions deepened his understanding of the subject. Thus, with the accumulated knowledge and insights from various quarters, he perfected what he called km-tech—a technology or a tool for load, price and grid frequency forecasting. It is an innovation that has the world taking note.

Balijepalli’s achievement assumes significance in a much larger context as at the time he took up the research, smart grid was a largely unknown field. His pathbreaking innovation in 2012 and the subsequent global recognition that followed, won India a strong foothold on the smart grid map of the world.
In fact, just two years back in May 2010, the Government of India had announced the formation of a Smart Grid Task Force set up to execute a US$ 132 million pilot smart grid project. The central idea was to develop and showcase the power saving measures that can be undertaken to improve energy efficiency in distribution networks across the country.

The IITian’s research was so novel that it caught the imagination of organisations like United Nations Industry Development Organisation (UNIDO) that invited him to co-author an in-house publication on smart grids titled *Smart and Just Grids*. The originality of his research, especially in the hitherto untouched field of forecasting with a smart grid, fetched Balijepalli, 26 at the time, a place in the MIT India TR35 2012 list (MIT Technology Review 35 Innovators Under 35 list). The Visakhapatnam (in Andhra Pradesh) youth’s innovative project was also one of the top 50 innovations in 2012 shortlisted by the Department of Science and Technology (DST) and the Lockheed Martin India Growth Programme. This again was no mean feat as Balijepalli was the only student to submit an innovation among established companies.

The gold medal and cash award of ₹1 lakh (US$ 1,628.4) were indeed welcome but what set Balijepalli on the next phase of his innovative journey was the assurance given by DST to finance his startup based on the business plan generated from his innovation. The promised financial assistance is to the tune of ₹50 lakh to ₹50 crore (US$ 81,419.96 to US$ 8.14 million). Additionally, the award made Balijepalli eligible for personal assistance from Indo-US forum to develop business in the USA, and a B2B membership of Federation of Indian Chambers of Commerce and Industry (FICCI) to participate in the S&T meetings and business development programmes—all free of cost. The student-innovator was now firmly set on the path of entrepreneurship. After patenting his innovation and commercialising it with Kalkitech, a Bangalore based SME that helps energy utilities across the globe enable the smart grid and achieve energy efficiency, Dr Balijepalli is currently working with Powergrid Corporation of India Limited and India Smart Grid Task Force (ISGTF) Secretariat in the Ministry of Power on achieving India’s smart grid vision. “This innovation is generating income on royalties off each sale and the implementation cost is around ₹5 lakh (US$ 8,142),” reveals the innovator discussing the practical applicability of his invention.

Defying the stereotype of a bespectacled and bookish scientist, Balijepalli comes across as a youthful all rounder with a zest for life. The positive energy he exudes is infectious and he displays a wide ranging interest. “I am interested in learning about other cultures, their traditions, related religions, mythology and demonology. My favourite hobby is playing chess and I like listening to classical music.” Certainly not a geek, the inventor also finds time at weekends to “sometimes go to the cinema”. His journey to becoming an innovator surprisingly does not originate in his pouring over large science journals. Rather, as he reveals, it springs from his interest in the stock exchange! “I regularly forecast stock prices. This expertise has helped me deal with uncertainties involved in the power sector to some extent,” says Balijepalli. Perhaps volatility of any sort has a certain correlation in algorithmic terms, especially in this case as it concerns forecasting electricity prices. Whatever that maybe, for now, the IITian’s innovation has many smart uses and immense benefits especially for the consumers. As Balijepalli explains, his research was focussed on easing consumers’ power pain points. These complex models are inspired by electricity consumers’ requirements in the power industry and the technology forecasts the price and load of electricity in the smart grid paradigm, taking the efficiency factor a step ahead.

So what is this km-tech innovation? In essence, the technology is an improvement on the current forecasting software leading to efficiency, be it price forecast, load forecast or even grid frequency. Balijepalli explains the concept, “A smart grid accommodates not only large, centralised power plants, but also the growing array of customer-sited distributed energy resources. These resources have coordinated forecasting requirements, among other needs. The innovation is all about a system and a method for electricity forecasting in the existing and future grid environments.” Notably, one of the primary goals of a smart grid is to empower consumers to become active participants in the power demand-supply flow. By forecasting electricity parameters such as price, grid frequency, and load, Balijepalli’s innovation facilitates the participation of consumers in balancing the power demand-supply ratio.

Km-tech or km-stochastic error correction technique (km-SEC) uses an advanced propriety mathematical...
function or in other words sophisticated algorithms to read the data of existing forecasting tools to arrive at accurate forecasts. Using these as inputs—the Indian energy exchange market’s clearing price values, forecast values by the industry’s standard software, and the history of errors—in addition to a Fibonacci module, which was developed at IIT Bombay, the km-tech innovation forecasts near precise data. In other words, km-tech is a core engine that uses the characteristic data matrix defined for an existing forecasting system, segregates the data and the different mathematical modules based on the locales and collates the data that will help improve the performance of the existing forecasting system. Explaining the km-tech advantage Balijepalli says, “The existing forecasting technologies face the drawback of using a large amount of historical data before being able to predict to standard practical accuracy levels. Moreover, most of the existing technologies fail to capture the dynamics of even moderately irregular variation patterns of the variables that are to be estimated. In order to attain these attributes some of these technologies tend to lose the golden property of ‘simplicity’. Extendibility to the future electricity grid environment and applicability to a wide variety of forecasting problems are the other major drawbacks.”

The accuracy of the system’s load generation was tested by the Indian Energy Exchange (IEX), which studied the Indian regional load volume and what volume to bid. Additional parameters like maximum hourly load were also analysed and the results showed that the potential electricity saving ranged between 14.45 and 35.64 per cent per day. There was another study conducted by a Mumbai based energy distribution company that revealed that energy savings worth ₹104.6 crore (US$ 17.19 million) a year for 1,000 MW capacity can be achieved with km-tech tool’s price forecasting feature.

The technology was welcomed widely by the industry and the young innovator who was also felicitated with the Gandhian Technology Edge award by Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI), National Innovation Foundation, says that km-tech can be used not only for price forecasting and load forecasting but also for wind forecasting and even grid frequency. “Km-tech also factors in the practical issues that may affect the price or the load frequency and these can be defined by the operator,” says the inventor. In simpler terms, km-tech brings out new insights and better forecasts using the existing data. Km-tech’s applicability is quite vast covering various industry players that make up the energy supply chain—from end consumers, power distribution operators, market participants, transmission operators, generators and system operators to governments.

Talking about the applicability of smart grids in the energy efficiency sphere, Balijepalli says it is the absence of accurate forecasting tools and flaws in the demand response program, called availability based tariff-unscheduled interchanges, that are the major reasons for power grid failures. “Smart grids address these issues by empowering the end consumers,” says the innovator, elaborating that km-tech, by studying the behaviour at the distribution transformer (DT) level and at the transmission bus level, enables efficient grid management by effectively coordinating dynamic grid load changes. As near accurate data in real time becomes widely available on price and load predictions, it will lead to effective handling of transmission peaks, outage management and distribution systems. The decision modules can be embedded in the developed technology and such corrective action ensured in real time, adds Balijepalli.

The drive to achieve a smart energy India has not yet ended for the innovator. Talking about his current engagement, Balijepalli says, “Smart grid movement for modernisation of the grid is mainly driven by the systems (communication, IT and power system) integration and improvement of electricity consumer services. I have successfully worked towards orienting electricity grids to electricity smart grids where I developed consumer oriented interoperable systems (COIS). Recently, I have started working on developing pragmatic models for consumer products on plug-in electric vehicles in the Indian market setup.” The innovator is also working hard to disseminate his message on smart grid energy management through his portal desismartgrid.com, India’s first smart grid educational portal. Log in to learn more and manage your energy needs smartly, efficiently and cost-effectively.

### FAQs on Smart Grid

Log in to India Smart Grid Knowledge Portal (indiasmartgrid.org) powered by the Ministry of Power, Government of India, for more details:

- A smart grid is an electricity network that can intelligently integrate the actions of all users connected to it—generators, consumers and those that do both—in order to efficiently deliver sustainable, economical and secure electricity supplies.
- A smart grid allows new large-scale, renewable-energy projects to connect to the grid. It integrates new digital technology into local electricity distribution networks and provides the pricing and control system to flexibly integrate new distributed energy resources close to the point of demand.
- Smart grid is characterised by consumer participation, real time pricing, power system efficiency and quality, and new products in terms of value added services.
THE KNOWLEDGE HUB

India is home to over 1,000 MNC R&D centres.
Here Art Lives On

NGMA is a museum which believes in keeping ‘time’ alive through art.

BY SANGITA THAKUR VARMA

The silver tree in the foreground shines blindingly in the afternoon sun. There are lotas (urns), baltis (buckets), doodh dabbas (milk containers) and other Indian kitchen utilities hanging from its branches like as many leaves. Visitors stand around it exclaiming in wonder. Some sit under its shade for a photo-op. Is it the tree of life? Does it express the artist’s angst as a householder weighed down by responsibilities? Is it denoting an existential dilemma or environmental degradation or unmindful depletion of precious resources by humans? Or is it simply denoting India, the way we are—lota, balti, dabba and all? Art is an esoteric discipline open to multiple interpretations from the viewers’ points of view, though efforts are afoot to bring it to the masses. One such attempt to demystify art is an ongoing exercise being undertaken for the past 60 years by the National Gallery of Modern Art (NGMA), New Delhi.

Quelling common perceptions of NGMA as a museum of lifeless objets d’art, Prof Rajeev Lochan, Director, NGMA, says, “An art museum is a repository of our past, present and future because the works of art are the only living things known of those times. It however depends upon how well you can read that time because embedded in these works are poetry, literature, art, culture and the sensibility of that time.” Art thus is not a dead but a living account of the time in which it was conceived. It talks about the cultural values that society has believed in and is embarked upon by an artist as the living system of that time. Prof Lochan, a renowned artist, and art education specialist with more than 20 years of teaching experience and scholarly activities, assumed office at NGMA in...
2001. His multidisciplinary approach and deep understanding of art as a discipline with diverse attitudes—conceptual, thematic and functional—helped him turn NGMA into a multidimensional gallery. Founded in 1954, NGMA was conceived as a premier museum of modern art of a newly independent nation. A veritable treasure trove of more than 17,000 art objects, including paintings, drawings, sculptures, prints, photographs, installations, and much else, it showcases masterpieces of the changing art forms of modern India spanning more than 150 years. It currently represents the works of about 2,000 artists from India and across the globe.

The museum of art was formally inaugurated by then Vice President Dr S Radhakrishnan in the presence of then Prime Minister Jawaharlal Nehru. Artist Amrita Shergil who left the world at an early age of 29, had bequeathed a formidable amount of work to the nation. “We owe the making of this gallery to Shergil because the first acquired art works by NGMA were hers,” says Prof Lochan. The gallery thus began its journey acquiring works of other artists, showcasing them and bringing in international works for exposure to Indian sensibilities and to familiarise Indians with what is happening in the world. “We have organised several landmark exhibitions. The expressed purpose of NGMA as per its brochure is to create “sensitivity, awareness and understanding among the public towards our art expressions, especially the contemporary idiom.” The gallery endeavours to engage viewers of all ages and experiences to see the relevance between life, contemporary experiences and its reflection in art. The installation by Subodh Gupta aptly called Dada (grandfather) that is the pride of NGMA’s sprawling grounds is a reflection of this. Explaining the difference between modern and contemporary art, Lochan says, “These are the words coined especially for the convenience of deciphering things. Modernity is a concept of evolution, an approach, a direction, and a sensibility. If I say that it is a part of a tradition, then what does it actually mean? Do we imply that it’s something of the past? But then let’s not forget that what is the past now was modern then.” According to Prof Lochan, these terms were essentially coined so there can’t be a date. “These are trends and approaches for our better convenience to decipher art.”

However for convenience sake art does have a date to denote its period. Contemporary art belongs to the period post 1970 and art belonging to the period before that is considered modern art. In fact the strength of NGMA is its

Sustained efforts for public awareness and art education are held by NGMA. It publishes catalogues, books, monographs, portfolios and posters for public education on India’s rich art heritage which are available at the museum shop. Periodical lectures and seminars, talks by well known artists, art historians and critics are organised. NGMA believes that art must play a prominent role in children’s development and propagates it through guided tours for different age groups, as also for special children.
discerning collection that represents the evolution of modern Indian art. The earliest in this period are the indigenous schools of great Indian Miniatures—the vibrant Company, Kalighat and Tanjore schools of painting. This is the era of academic realists—Raja Ravi Varma, MF Pithawala, Pestonjee Bomonjee, Hemen Majumdar and others like them trained in the British art schools. The Bengal School that countered the aesthetic realism of the academic realists, represented by Abanindranath Tagore and his disciples M A R Chughtai, Kshitindra Majumdar and others, is the next important phase in Indian modern art. The 1920s–30s was the period of Santiniketan masters Nandal Bose, Ramkinkar Baij and Benode Bihar Mukherjee who explored new aesthetic dimensions in their celebration of the environment. This period also saw the emergence of four individual artistic articulations—Rabindranath Tagore, Amrita Shergil, Gagnendranath Tagore and Jamini Roy.

In the next decade—1940s—different groups of artists emerged in various cities. In Mumbai, it was the Progressive Artists Group with MF Hussain, FN Souza, KH Ara, SH Raza; in Bengal, it was the Calcutta Group which included Gopal Ghose, Paritosh Sen and Prodosh Das Gupta; and in Cholamandal near Chennai, an idyllic artist commune was set up by K C S Panicker, S G Vasudev and K Ramanujan. Abstract took over the Indian art landscape in the 1950s and 60s with new artistic expressions predominating in the works of Biren De, G R Santosh, V S Gaitonde, Tyeb Mehta, Satish Gujaral, Akbar Padamsee, NS Bendre and others. Artists also explored expressionism, surrealism, fantasies and pop art during the 1960s and the 70s, prominent among them being Ganesh Pyne, Bhupen Kakkar, GM Sheikh, Arpita Singh and others.

NGMA also has a rich collection of contemporary artworks including those of Subodh Gupta and architect Raj Rewal. In November 2013, it had held a retrospective of Atul Dodiya. Prof Lochan explains the concept of contemporary art saying, “It means that of today. NGMA talks about contemporary life. If we talk about contemporaneity it means the thought process that evolved according to the needs of the social circumstances that time has pushed us into and it’s only art that is reflective of its time.”

NGMA also explores the relation between cinema and art through its vast collection of films on artists and films made by them. It showcases, preserves, collects and times the value structures of art works and what the time has propagated. The museum, in this context, assumes a wider role. “It is not only to showcase, but to educate and try and take people to the past and the future at the same time,” explains the professor.

Though NGMA is called a gallery, it is not a commercial enterprise, clarifies Prof Lochan. “We don’t promote art, we showcase it. We hold retrospectives.” The idea for retrospectives came to the professor from the first exhibition he had organised on Picasso for NGMA. “It came to my mind that Indian artists across the country, in terms of quality, are second to none. They have never been pitched and showcased in totality in the fashion that they so deserved.” Prof Lochan embarked on the mission of organising major retrospectives and has held almost 140 exhibitions with about 45 overseas.

An exhibition of this scale and nature has a gestation period of four to five years, as it involves researchers and academicians,” says the professor.

Now with branches in Mumbai and Bengaluru and more on the anvil, NGMA plans to travel with its exhibitions to the nooks of the country. Lochan says, “People can’t always come to the capital... People can’t always come to the capital...”

**“We desire to open branches in other parts of the country so that the big exhibitions that we do in Delhi can travel... People can’t always come to the capital...”**

**Prof Rajeev Lochan**

**Director, NGMA**

Subtle Nuances: At NGMA visitors are provided an insight into art’s many layers and meanings.
THE GIFT OF WELL BEING TO THE WORLD

Yoga, which originated in India 5,000 years ago, is India’s gift to the world.
It’s royal, it’s imposing and it’s blue! It is the origin of the famous mawa kachoris (flights have been delayed famously over this delicacy) and yes, it is the place that sashays on the international fashion ramps in an eponymous avatar—the world renowned piece of sartorial elegance—the Indian breeches. That in short is Jodhpur, the second largest city of Rajasthan and seat of erstwhile royals, the famous Rathores. But there’s much more to explore in this royal township. To do this, we recommend a trip to the desert town in the months between October and March, the best time to visit the Gateway to the Thar. Yes that’s another of the monikers of the Blue City and the Sun City. Situated on the edge of the Thar desert, the town is bright and sunny, hot and dry—a typical desert weather for most parts of the year. Unless the idea is to get a real desert experience, heat, sand and all, it is perfect to visit the city of blue houses in the pleasant season. Many buses, trains and flights take the visitor to the royal abode. But a road trip to Rajasthan has its own charm and so does a trip on the Palace on Wheels—Royal Rajasthan on Wheels. Board this regal chariot at Delhi and take a seven day round trip of Rajasthan, visiting all the former princely states ensconced in luxury. Whatever be the choice of transport, Jodhpur is regal, scenic and mesmerising—on every visit.

It is the festive season in India and Jodhpur has...
Jodhpur, with the city bustling with activity, visits to temples, monuments, forts and short excursions to the outskirts that add to the experience. Seeped in history, Jodhpur has a unique character that even a casual visitor wants to explore. The best place to start this historical journey is the Mehrangarh Fort. It is, in fact, the reason why the city houses are painted blue! Apart from the fact that it denoted the highest castes resided in these blue abodes, it also assured of their allegiance to the father of the city—Rao Jodha, chief of the Rathore clan. He founded the city of Jodhpur in 1459 and the city was named after him. Jodha has left behind a magnificent legacy for his children and India. Each generation made some additions to the fort, in the process, creating a magnificent masterpiece. Explore the ancient citadel of the Rathores and the sprawling city at its foothills stretching out to the 10 km long 16th century city wall. If the maze of medieval lanes and bylanes of the city, about 150 metres down the hill from the fort, are a journey of discovery of Jodhpur’s unique culture and cuisine, the fort itself speaks of many myths and legends that have become entwined in city’s folklore. The seven gates of the fort have their own intriguing history and the exquisite interior stands testimony to tales of mystery and scandal, love and betrayal. The imposing ramparts have stood sentinel over this invincible fort that never fell into an enemy’s hands, ensuring its impregnability. Mehrangarh offers a virtual treat for the romantics and history buffs alike.

Just a kilometre from the fort is Jaswant Thada, the white marble cenotaph built in honour of Maharaja Jaswant Singh II. The intricately carved monument with domes and lattices is a historical work of genius and a peaceful spot away from the hustle-bustle of the town. It is a good place to rest your...
tired feet after a hectic day of sightseeing. Just sprawl out on the front lawn and enjoy the magnificent view of the fort from the vantage point. While on historical monuments, a not to be missed destination is Umaid Bhawan Palace. Situated atop the Chittar hill this palace exhibits a strong influence of art-deco style and is an Indo-colonial architectural marvel. Built by British architect Henry Vaughan, it was completed in 1944. A part of the palace today is a heritage hotel and the rest is a museum. Staying at the ultra luxe hotel is a treat in itself. While browsing through the museum do take a look at the vintage car and watch collection of India’s royals. Umed Garden with its museum, zoo and aviary is popular destination. Another spot for a communion with nature is the Rao Jodha Desert Rock Park. An example of ecological tourism, this wasteland around the fort covering an expanse of 200 acres was planted with a variety of plants in 2006. The park today is a treasure trove of foliage and flora that change colour with the season. Explore nature’s bounty at peace and then head to Jodhpur Flying Fox for a more adventurous trip. This six-lane zip-lining adventure takes approximately two hours and is a thrilling ride suspended mid-air with the imposing Mehrangarh Fort in the backdrop.

The meek can give it a miss and head to the old town to discover its delights. If you have elected to stay in this busy town, it has over 100 guesthouses and the best budget hotels, there is hardly a chance of missing the iconic Clock Tower. The still ticking clock situated in the heart of the town is its pulse. The Sadar Bazaar runs right next to it and is bustling throughout the day. Take a walking tour and soak in the ambience of Jodhpuri culture. A walk also helps spot the best bargains on offer. Explore the market for the colourful bandhani saris or odhanis or block printed material, jootis, spices, handicrafts and much else that is sold here. Post a shopathon, Spice Paradise beckons. This is not the usual restaurant but a cooking class thrown in and is famous for its masala chai (spice tea) blend refined to a fine art. After a gastronomical meal, a visit to Janata Sweet Home may not sound too appetising. But this is one not to be missed gastronomical tourism spot of Jodhpur. The iconic sweet shop is famous for its mawa kachori, a dish that originated in Jodhpur. There are temples and other palaces and monument to visit here, but a veritable treat await a few kilometres beyond Jodhpur’s borders for the intrepid traveller.

The lifebelt of Jodhpur is the Jaswant Sagar Dam, constructed in 1892 by Maharaja Jaswant Singh. A boat ride enjoying the view is a thrilling experience, as the guide explains the intricacies of the dam. For the wildlife enthusiasts, an excursion to the Machia Safaria Park is mandatory. Nagaur, 135 km from Jodhpur is a must see for its Mughal architectural marvels. The Nagaur Fair held in February is a week-long cattle celebration and the renowned Rajasthani puppeteers hold shows here. A Guda Bishnoi Village Safari gives a taste of the real Rajasthan—the indigenous people inhabiting this stretch of Jodhpur are world famous for their eco-friendly ways of living. The Guda Bishnoi Lake is the watering hole of the Black Buck and home to many migratory birds. Not to be missed! The hectic pace dictated by so many marvellous spots can be tiring. Head to Bal Samand Palace, the summer pavilion of Maharaj Sur Singh of Jodhpur, for a rest before you depart. A stay at this regal heritage hotel is a real royal treat. Jodhpur, the Blue City, is certainly the best place to beat the blues!
AN INCREDIBLE DESTINATION

Indian tourism and hospitality sector to touch US$ 419 billion by 2022.

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A Tech Haat to Drive Rural Art

eMithilaHaat, a fledgling social enterprise, is on a mission to preserve and propagate Mithilanchal’s heritage through an exclusive online store and on-ground efforts to support the artists. **BY SANGITA THAKUR VARMA**

Just about some months into operation, the social enterprise eMithilaHaat is creating ripples in the right quarters—from among the urban buyers of all things ethnic and exotic to the accomplished artisans of Darbhanga and Mithilanchal. In the eMithilaHaat enterprise model, technology and modernity have been yoked together in the most unlikely yet holiest of matrimony with ancient craft and tradition. The credit for this novel venture goes to a young techie—Ankit Jha. In his late 20s, Jha is an as unlikely candidate for a social enterprise as is the concept of an online market for folk art. When questioned, Jha is candid about his choices in life and has no regrets about giving up a career that could have taken him places. The fact that he chose to float a social enterprise and that too with relatively limited chances of success, rather than go for a business plan that offered quick scaling and returns, needed some decoding.

So what prompted him to launch an exclusive e-market place for Mithila paintings? For the young engineer it was a rather personal decision motivated by an inner call. At the time, Jha was working at an IT firm in Bangalore. As was routine, he called his cousin down in his hometown of Darbhanga for a chat during lunchtime. While catching up on the local gossip, the cousins discussed their aunt Sulekha (name changed), a reputed Mithila artist. “I was taken aback to hear that she had given up her beloved profession forced by financial constraints. We had grown up watching her working on Mithila paintings sitting on a mat in the inner courtyard of her house,” recalls Jha. Something took hold of him then. A flood of sweet memories associated with Sulekha aunty came hauntingly back. Jha couldn’t shrug off the thoughts that followed post that lunch hour conversation. One of the most distinct and pleasant memories of his childhood was the time spent sitting with his brothers and sisters around Sulekha aunty while she painted. Sulekha would give the children sweets, snacks and sherbat and the kids just loved the afternoons lounging around her for hours, firing a hundred questions that she answered most patiently. “What is this? What is that? This does not look like a deer,” the childish babble went on incredulously as characters came alive in her hands. Sulekha aunty would answer with a laugh, “Wait for three more days. Let me finish this and then I will ask you which deer is more beautiful—a real deer or the one I have painted,” she would reply. Jha reminisces with a soft smile. Further enquiries revealed that the plight was not of Sulekha’s alone. Many artisans in
Mithilanchal were facing similar issues—lack of access to market and hence a good price for their art pieces. “Their confidence was low and many artists were abandoning their ancestral occupation for other more lucrative though mundane options,” says Jha. In the process, they were giving up their legacy, a unique and an interesting part of India’s rich cultural heritage, and pushing the art form to the brink of oblivion. For Jha, a son of the soil, “it was really painful to know all this”. If that lunch hour was pure agony for Jha, what followed was tougher. Unable to concentrate on work, he spent time mulling options on helping his aunt and the other artists. He knew that financial help would be a short term solution and the rural folk would never compromise on their self-respect to accept unsolicited pecuniary help. He had to think of a more strategic approach to help these artists get back to their canvases. Jha was determined to do something. For the next few days he did exhaustive research on the subject. “I researched on Mithila art, talked to more people in my village and was astonished with the kind of response this art had got,” he elaborates. It was the catalyst for Jha’s decision. “I had made up my mind to work for them and decided to resign.” His decision surprised most. But his sound business plan also brought him a co-founder and investor in Gurmeet Singh Ahuja, who was working as Vice President, Strategy and Delivery and President, Human Resources, in same company as Jha. Curious at Jha’s decision to suddenly quit, Ahuja confronted him. When he discovered that the young lad’s leaving the company wasn’t for a better offer, but to set up his own social enterprise, an impressed Ahuja offered his helping hand.

To Jha, who was hardly anticipating any support at that stage, this offer out of the blue came as a pleasant surprise. “I was really bewildered,” recalls Jha. But now he had the seed money to lay the foundation of eMithilaHaat. The third partner in this venture was not so easily convinced though. Jha’s father, Jitendra Kishore Jha, currently COO of eMithilaHaat, is a teacher in the government high school at Siwan. Initially furious with his son’s decision to quit a high paying IT job, Jha senior came around once his son laid out before him the roadmap of eMithilaHaat. The plan was so convincing that Jitendra Kishore Jha not only decided to sink his hard earned savings into his son’s dream venture, but also became an active operations and product procurement head. He now tours the villages meeting and convincing artists to partner with eMithilaHaat.
The idea is noble; the spirit genuine and the efforts hard. But what exactly is the business model and is the concept really sustainable? While an exclusive e-tailing website for genuine Mithila paintings sounds good, is there a market for it, and is the model scalable? Jha finds the questions interesting. His confidence is infectious. Explaining the business model he says, “We have on our panel more than 50 renowned artists from Mithilanchal. We buy their work at a price higher than the market rate they earlier sold at and put them up on our online market platform eMithilaHaat webstore. They are then sold to the worldwide consumer base from there, as the market for the Mithila products is as wide as the world wide web.” As regards the sustainability and scalability issue, while Jha accedes, “I would say it’s a bit difficult compared to other enterprises, he adds, “But please note that it is only a bit difficult.” Conscious that a social enterprise that is too focussed on a particular art form can face severe sustainability issues, Jha’s immediate concern is to ensure a continuous inflow of revenue in order to scale up fast and match competition in the space. Going forward, the social enterprise would need more investments and eMithilaHaat is already exploring avenues to fund its ambitions. “We are currently working with our initial investment and dividend earned on it so far. It’s time now for a fresh series A funding. We are actively looking forward to taking a leap from our seed-funding stage to Series A funding,” informs Jha. Offers are pouring, but the company is “looking at those investing institutions which can spare the time and mentorship that we require a lot,” Jha says. Meanwhile, the company’s vision plan has laid out a projection of three years and Jha is confident that in that period, “we are going to make eMithilaHaat really big.”

Imitations, the bane of indigenous art and craft, also do not care the socialpreneur. “Of course, the market is crowded with other players. But a majority of products listed on these platforms are not genuine. It’s really heartbreaking to find imitators who are almost abusing the style of painting by not following the guidelines,” he accedes. What makes Jha so confident is the working model of exclusivity that is the hallmark of his enterprise. “eMithilaHaat works with the legends in the field who have been working on this art form their whole life and have won awards and accolades like Padma Shri, Bihar Ratna, Guru Shreshtha Shilpa, national awards, etc.,” says Jha. All the artworks on the web store are genuine grassroots products and come with a certificate of genuineness, which gives the buyer 100 per cent money back guarantee in case the work is found to be an imitation. By doing away with the middleman route, eMithilaHaat has ensured that the artists get the maximum benefit of their labour. “We pay them what the artwork is worth. In addition, we will also be sharing our profit with them every six months,” says Jha. This youth of Mithilanchal knows he is on the right track. “I speak their language, I talk like them, I eat like them and I think like them. I was one of them, the one who got the opportunity to get an engineering degree and was destined to live a different life. But I know now that there would not have been such contentment in that life,” he declares. The folk artists who understood this emotional connect have accepted Jha as one of their own—one who has returned home as their saviour. eMithilaHaat is now also their own crusade.
Innovating for India
Innovation is contextual to demand and impact.

BY SANGITA THAKUR VARMA

For most of us used to looking at innovation as an individual achievement, Shyama V Ramani’s book is an eye-opener. She introduces the uninitiated reader to the whole system of innovation that forms the core of a country’s growth. Inspired by the national system of innovation approach pioneered by economist Prof Richard Nelson, and while working on a book on sectoral systems of innovation, along with him, the author decided to collect a team of experts to undertake a similar exhaustive exercise on India. The result was—Innovation in India—Combining Economic Growth with Inclusive Development.

The book is an academic exploration of what constitutes innovation in crucial sectors of the country and how it has helped in India’s growth story. It also discusses the challenges and suggests the way forward. The contributors to the volume, all academicians and experts of established authority and worldwide repute, through their individual in depth writings, make the book a must read for all policy makers, educationists, India watchers, students and general readers interested in India.

There is a growing emphasis on industry-academia collaboration in the country in order to promote not just research, but research that promotes an innovation driven market. Be it manufacturing, pharmaceuticals, agriculture or biotechnology, India is keenly promoting its academia and industry through a slew of incentives, to come forward in mutually beneficial tie-ups. The country’s startup culture too hinges on innovation. India, from a policy perspective, has built a strong foundation of universities aimed at producing highly trained personnel with a strong scientific temperament and research orientation. It has also concentrated on establishing a strong network of research institutions outside the university system. Gita Surie traces the roots of this system of India’s science and technology innovation that was laid down right at the time of Independence and subsequently cemented and fortified over the years in the chapter University as a Catalyst of Innovation, Entrepreneurship and New Market. Surie, an associate professor at Adelphi University whose research interests include subjects like cross boarder innovation and the emergence of novel organisational forms and markets, demonstrates the complexity of the highly progressed science and technology system of India and emphasises through case studies how low cost innovations in the field can be utilised for wide scale development in the rural and urban areas.

Innovations galore being produced in various fields may be fine. They show a country as a superior knowledge economy. However, is there demand for the innovations being created in the country? Smita Srinivas visits this basic question and says that demand as both a concept and quantity has a systemic aspect. In diverse economies like India where demands are not homogeneous, understanding the nature of demand for innovation is an imperative. According to her,

“...the dynamics of innovation generation is different in different sectors, and when targeting different communities.”
A good measure of innovation by the public sector is the number of cultivars that the Department of Agriculture has notified or recognised as superior new cultivars during various periods.

The Innovation Systems (IS) approach has been widely used to understand the innovation processes by looking at not just the individual firms or research institutes but the broader societal structure, given the number of actors and institutions involved... any analytical exercise becomes quite complex.

In the second phase, major investments made by the government along with donor agencies in the sector made it possible to multiply the seeds of Green Revolution cultivars. Seed laws were enacted that helped the growth of the indigenous farming community further. The government also took care of the training needs in this phase. The third intervention was the phase of liberalisation that allowed private investment and foreign direct investment in the sector.

India is a leading global player in information technology (IT) and is also widely recognised as a competitive exporter of software services. The chapter National Innovation Systems and the Indian Software Industry Development gives a perspective on the industry and its author Nagesh Kumar provides indicators of its growing software capabilities. He also points to the increasing R&D thrust of leading Indian companies in tune with their growing internationalisation. Kumar is the Chief Economist, United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).

What is the secret behind India’s global pharma success? India made rapid gains in the sector post-Independence and from an industry bereft of much capability at that time, it emerged as a global leader. How did it manage this swift growth? Editor Ramani and Samira Guennif, (Associate Professor, University Paris 13), analyse the industry and explain its rapid growth trajectory through the National System of Innovation (NSI) framework.

Manish Anand, Associate Fellow, The Energy and Resources Institute (TERI), takes us through the just emerging nanoscience and nanotechnology ecosystem—the sunrise industry—and it is a delight to learn that the government is playing a supportive role in this emerging field that promises far reaching returns. India is already making great headway in the space thanks to its strengthening scientific and technological capabilities in the sector. The section also brings to light India’s energy innovation efforts in the field of wind energy which began actively in 1990, again with strong government support. Innovations in the automobile sector are also discussed.

Part III of the book deals with Innovation for Inclusive Development and takes the reader from innovations in traditional medicine systems that span products, therapies and packaging, to innovations in sanitation systems in India. The country is certainly demonstrating its innovative capabilities in diverse fields.

The book has a pithy message for policy makers—innovation must have users. Innovations require huge public investments and hence must be accompanied by “institutional reforms” to maximise their generation and socio-economic impact. A bottom up approach to innovation is thus the need of the hour.
Brand India

What’s new@IBEF?

- Brand India kit for Prime Minister Modi’s US visit
  IBEF provided knowledge kits on India for the Indian mission in the US for dissemination during the business seminar held during Prime Minister Narendra Modi’s visit to the US. The kits included a detailed overview of new initiatives and policies of the government, the business environment and opportunities in India and the best of Indian products and services. IBEF also prepared customised tea, coffee and spice boxes to be gifted during the visit.

- Brand India showcase at Indira Gandhi International Airport (T3)
  IBEF has put up targeted messaging at strategic locations in the Indira Gandhi International Airport (T3) to build international awareness and perception on Brand India. The posters highlight India’s exemplary achievements and contributions towards global business and economy.

- Brand India Plantations (Tea, Coffee & Spices) project
  IBEF launched a dedicated website – www.teacoffeespiceofindia.com that provides comprehensive insights and industry perspectives on the three sectors. A coffee table book on Indian tea, coffee and spices has also been prepared.

- Film on initiatives and achievements of the Department of Commerce
  A film for the Department of Commerce was prepared by IBEF. It showcases the achievements of the Department and the initiatives being taken by it to further catalyse the growth in Indian exports.
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MANGALYAAN MEETS MARS

With the success of ISRO’s Mars Orbiter Mission, India has become the first country globally to have reached the Red Planet in the first attempt itself.