

RURAL UPDATE


ENGINEER LIGHTS UP VILLAGES
WITH CHEAP SOLAR POWER

INNOVATION CORNER

INNOVATOR TURNS TREADLE
PRESSES INTO QUALITY PRINTERS

EMERGING ENTREPRENEUR

ENGINEER CONVERTS WASTE
PLASTIC INTO HIGH QUALITY FUEL



Rise Of The Indian Middle Class

Seen as located somewhere between the worker and the entrepreneur classes, the Indian middle class has carved itself a position far up on the economic scale.

EDITORIAL

Editor: Anuradha Das Mathur

Consulting Editor: Hemant Kumar

Managing Editor: Mahesh Ravi

Copy Editor: Rohini Banerjee

DESIGN

Sr. Creative Director: Jayan K Narayanan

Art Director: Binesh Sreedharan

Associate Art Director: Anil VK

Sr. Visualiser: PC Anoop

Sr. Designers: Prasanth TR, Anil T, Joffy Jose

Anoop Verma, NV Baiju, Vinod Shinde & Chander Dange

Designers: Sristi Maurya, Suneesh K

Shigil N & Charu Dwivedi

Chief Photographer: Subhojit Paul

Photographer: Jiten Gandhi

SALES & MARKETING

VP Sales & Marketing: Naveen Chand Singh

National Manager-Events & Special Projects: Mahantesh Godi

Regional Manager (South): Vinodh K

Regional Manager (North): Lalit Arun

Regional Manager (West): Sachin Mhaskilkar

PRODUCTION & LOGISTICS

Sr. GM. Operations: Shivshankar M Hiremath

Production Executive: Vilas Mhatre

Logistics: MP Singh, Mohd. Ansari, Shashi Shekhar Singh

INDIA BRAND EQUITY FOUNDATION

CEO: Aparna Dutt Sharma

Project Manager: Priya Sahai Shirali



India Now—Business and Economy is a bi-monthly magazine published and printed by India Brand Equity Foundation (IBEF), Gurgaon. It is published at 249- F, Sector-18, Udyog Vihar, Phase- IV, Gurgaon – 122015, Haryana and printed at Silverpoint Press Pvt Ltd, D-107, TTC Industrial Area, Nerul, Navi Mumbai – 400706. The magazine is edited by Anuradha Das Mathur, Nine Dot Nine Mediaworx Pvt Ltd., B-118 Sector 2 Noida – 201301, Uttar Pradesh.

India Now—Business and Economy is for private circulation only. Material in this publication may not be reproduced in any form without the written permission of IBEF.

Editorial opinions expressed in the magazine are not necessarily those of IBEF and IBEF does not take responsibility for the advertising content, content obtained from third parties and views expressed by any independent author/contributor. (India Brand Equity Foundation, c/o Confederation of Indian Industry, 249-F, Sector 18, Udyog Vihar Phase IV, Gurgaon 122 015, Haryana, India; Tel: 91-124-4014060-67; Fax: 91-124-4013873/75; Email: aparnadutt.sharma@ibef.org).

Opinions expressed herein are of the authors and do not necessarily reflect any opinion of Nine Dot Nine Mediaworx Pvt Ltd., B-118 Sector 2 Noida – 201301, Uttar Pradesh, India; Tel: 91-120-4010-999; Fax: 91-120-4010-911; Email: info@9dot9.in

Unstoppable India

In June last year, Harvard Law graduate, Wall Street commentator and CNBC's celebrated Mad Money host Jim Cramer called the growth of the Indian middle class 'unstoppable.' The highly reputed investment consultant, former hedge fund manager, news reporter and author of several bestselling books said: "The growth of the middle class means more travel, more trade, more need for electricity, more need for clean water." India's financial institutions and telecommunications and infrastructure companies are going to do exceedingly well in the years to come, he added.

Cramer's words are significant in two ways. One, that the Indian middle class is on the ascent, but more importantly, that it is now being noticed worldwide.

It has taken more than two generations of hard work, but the middle class in India has finally come unto its own. From scooters and low-paying 9-to-5 jobs to scrounging and saving, it is now financially on steadier ground and things are looking decidedly bright. Its investment is not in money, rather in education, development and enrichment—key ingredients of growth and success. Much of India's dot com boom through the nineties owes itself to the toils of this class, as does almost everything else now, from new horizons in management, investment, urbanisation, to governance and so on. This is not just a captive pool for commercial goods or loan products or television advertising, this is an influential ocean of energy—charged, ready and full of optimism. This is what drives the engine of India's growth.

Equally powerful is the spirit of innovativeness that is so evident in the way Mumbai's Raghavendra Rao converts waste plastic into high-quality fuel, a technology that has so far eluded some of the best brains in the West. Or in the way Satish Deb of Chhattisgarh converted foot-operated treadle presses into high-quality printers, and literally saved the ageing and dying presses, single-handedly. No less important is the contribution of IIT-alumnus Dr Harish Hande, who makes, sells, services and finances solar power panels for India's villagers.

Jim Cramer is right: Indians are now unstoppable.

Hemant Kumar

CONTENTS

FEBRUARY-MARCH 2011

COVER DESIGN: ANIL T



COVER STORY

10 | Rise of the Indian middle class Seen as located somewhere between the worker and the entrepreneur classes, the Indian middle class has carved itself a position far up on the economic scale.



Please Recycle
This Magazine
And Remove
Inserts Before
Recycling

COPYRIGHT Published & printed by India Brand Equity Foundation (IBEF), 249- F, Sector-18, Udyog Vihar, Phase- IV, Gurgaon-122015, Haryana. India Now-Business and Economy is for private circulation only. Material in this publication may not be reproduced in any form without the written permission of IBEF.

MNC WATCH



18 | POWERED ON: DELL

In just four years of launching full-scale operations in India, world number two PC manufacturer is India's number one.

ARTS & CULTURE



42 | TREASURE GUARD: IGNSA

The Indira Gandhi National Centre for the Arts (IGNCA), identifies, catalogues and showcases Indian art forms.



EMERGING ENTREPRENEURS

36 | Wealth from Waste
 Mumbai-based technology firm's cheap, eco-friendly process converts waste plastic into high quality fuel.



INNOVATION CORNER

40 | EXPRESS INNOVATION

Innovator converts dying foot-operated treadle presses into high quality printers, giving offset presses a run for their money.

MADE IN INDIA

34 | SUCCESS CODE

Innovating constantly, Wipro proves why it is India's number three IT company.

REGULARS

- 01 | EDITORIAL
- 04 | NATIONAL ROUND-UP
- 21 | MICROFINANCE
- 44 | TOURISM UPDATE
- 46 | BOOK SHELF
- 48 | RURAL UPDATE

SECTORAL UPDATE



22 | FMCG: SURGING DEMAND
 Growing economy, rising incomes and demand spell good news for the market.



25 | ELECTRICAL EQUIPMENT: CHARGED & READY
 The sector switches into high gear in expanded role.



28 | GEMS AND JEWELLERY: SHINING METAL
 The market dazzles with its brilliant performance.



31 | STEEL: SOLID CORE
 India's robust steel industry has done well, and is poised for even higher achievements.

VOICE OF A VISIONARY

A great man is different from an eminent one in that he is ready to be the servant of the society. **B R Ambedkar**



National ROUND-UP

PHOTO BY PHOTOS.COM



FDI to flow into new areas: Ernst & Young

A RECENT industry survey says that by 2020, India will lead the world in education, research and development, innovation and in the production of high value-added goods and services. International consulting firm Ernst & Young's First Indian Attractiveness survey says India will attract foreign direct investment (FDI) in new areas of growth, not just low-cost business process outsourcing (BPO).

The survey involved interviewing more than 500 global business leaders about the potential of the Indian market. The interviews were

conducted late last year and the findings were released in January, this year.

The automotive, consumer products and infrastructure sectors draw significant FDI, the report said. Manufacturing attracts the most FDI projects in India, which is emerging as a hub for export. This is followed by sales, marketing and support, business services, design and development. Between 2003 and 2010, the number of FDI projects increased by 7 per cent and jobs they created, increased by 4 per cent annually, the report added.

DATA BRIEFING

7%
annual
growth rate
of foreign
direct in-
vestment
projects be-
tween 2003
and 2010.

PHOTO IMAGING BY ANOOP VERMA



Indians better than Americans, Japanese and South Koreans at managing money, says ING survey

WHEN IT comes to managing finances, Indians are ahead of Americans, Japanese and South Koreans, says Dutch financial institution ING's recently released Consumer Resourcefulness Survey. Released last month, the survey also says that 55 per cent of Indians are financially literate, second only to the Japanese. For the survey, ING interviewed more than 5,000 respondents across 10 countries in Europe, North and South America and Asia.

The survey explored how the financial literacy of consumers influenced their attitude, behaviour and emotional well-being related to financial decision making.

According to the survey, 87 per cent of Indian households have an emergency fund for two months or more, as against 33 per cent of households in the rest of the world. "The survey shows that Indians are better at managing their finances than people of most other countries we surveyed, including being better prepared for their various life stages, especially retirement," said Uco Vegter, chief marketing and strategy officer, ING Life.

UPDATE ON MEDICAL RESEARCH

PHOTO BY PHOTOS.COM



The highly competitive Stanford-India Biodesign fellowship recently drafted four outstanding Indian researchers for a year-long research programme in biomedical design. Funded chiefly by the Ministry of Science and Technology and Stanford University, the programme will train the next generation of medical technology innovators in India, says an official release.

THEY SAID IT ANAND MAHINDRA

Anand Mahindra, Vice Chairman and Managing Director, Mahindra Group, at Park City, Utah, USA, on January 25 after signing an awards and endowment agreement with Hollywood legend Robert Redford's not-for-profit Sundance Institute that promotes independent theatre and cinema worldwide.

"Our intention is to nurture as well as hone the talents of an exciting new generation of Indian filmmakers. The guidance and knowhow of the Sundance Institute shall be extremely valuable to us in our initiatives."





PHOTO BY PHOTOS.COM

Mobile Banking comes calling

MOBILE BANKING is on the verge of taking off in India. The nation's largest telecom service provider Bharti Airtel has teamed up with the largest lender State Bank of India (SBI), to launch an ambitious mobile banking joint venture.

At the same time, the third-largest mobile firm Vodafone Essar, has tied up with ICICI Bank to offer electronic payments.

In the 51:49 SBI-Airtel venture, the bank will have the larger share. The CEO will be SBI's and COO from Airtel.

Together, they will invest INR 100 crore (US\$ 22 million) in the new company.

"This will be a complete

game changer, leveraging SBI's expertise in the banking sector along with Airtel's 150 million strong customer base and ecosystem of over 1.5 million retailers and distributors across India," said Sunil Mittal, chairman, Bharti

Airtel. "We will create a scalable operation that will address the banking requirements of millions of Indians through the mobile platform."

The JV will help SBI, which has more than 13,000 branches, to expand its reach in

rural areas, while Airtel will add value to its offerings, said Mittal.

270 million Airtel and Vodafone subscribers, 13,000 SBI branches and ICICI's stake in microfinance set to make m-banking explode.

In the last four years, SBI has set up 15,000 customer service points of business correspondents as well as 13,000 business facilitators.

Vodafone manages 1.5 million retail points for its 121 million subscribers. Moderated by RBI's policies, India's m-banking is gaining momentum with cross-partnerships among banks, telecommunication companies and microfinance technology companies.

ICICI Bank also has a stake in microfinance company Financial Inclusion Network and Operations Limited (FINO Ltd), which has a breadth of investors from the public sector, international investors and private equity holders.

Coupled with the government's mammoth Unique Identification project, mobile banking promises actual financial inclusion for all.

SOUND BITES



"The next decade is likely to see the fastest ever growth the country has witnessed."

—Adi Godrej
Chairman, Godrej Group



"It is now a multi-polar world; you can't isolate any country from any event in the rest of the world."

—Y C Deveshwar
Chairman, ITC



"Lack of resources is an entrepreneur's biggest advantage. It forces him to think of a solution."

—Capt Gopinath,
CMD, Air Deccan Express Logistics

**AVIATION
UPDATE**

IndiGo inks aviation's biggest deal with Airbus. \$ 15.6 billion for 180 new jets.

INDIA'S BUDGET airline IndiGo has signed aviation industry's single largest deal ever, to buy 180 A-320 aircraft from Airbus of France – at a sky-high US\$ 15.6 billion.

Owned by InterGlobe Enterprises and industry veteran Rakesh Gangwal, a former chief executive of U.S. Airways, IndiGo is the third-largest domestic airline by market share after less than five years of flying in India.

As news of the order appeared, shares of Airbus' parent company EADS rose as much as six per cent, hitting their highest in three years.

IndiGo has ordered two versions of the best-selling, single-aisle aircraft-- a fleet of 30 classic A-320s that carry 150 people on short and medium routes, and 150 of its upgraded, fuel-saving version.

Airbus will deliver the first of the new aircraft in 2015, after IndiGo procures all 100 planes from a previous order, according to the company's president, Aditya Ghosh.

The carrier plans to launch international operations in September this year, with flights to the Middle East, South-east Asia and South Asia. By then, it will have completed five years of operation, a mandatory requirement for flying overseas routes.

Many Indian carriers are adding aircraft to their fleets as demand booms in a surging economy growing at

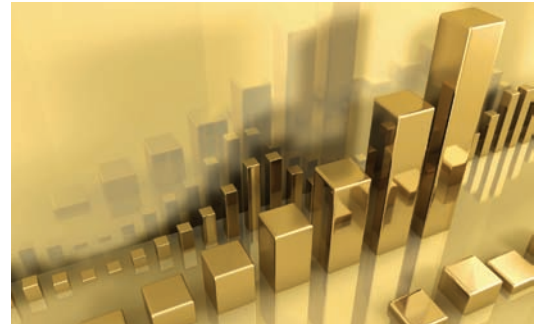
nearly nine per cent.

In November last year, IndiGo's rival SpiceJet had placed an order for 30 Nextgen turboprop aircraft from Canada's Bombardier Inc for nearly a billion dollars.

180
THE NUMBER OF
AIRBUS A-320
PLANES ORDERED
IN THE US\$ 15.6
BILLION DEAL.

ECONOMY UPDATE

Economy set to grow by 8.6 per cent in 2010-11



A GOOD monsoon has yielded high agricultural output, helping the economy grow by an estimated 8.6 per cent in 2010-11, against 8 per cent a year ago.

According to Advance Estimates released recently by the government, the Indian economy did better than expected this financial year, despite fragile global recovery since the financial meltdown of 2008.

"All along, I was maintaining, it should be around 8.5 per cent plus. 8.6 per cent is accepted," Finance Minister Pranab Mukherjee said, adding, "Now the other

issues are inflation, trade balance... these are to be addressed." The advance GDP estimates are released before the end of a financial year to enable the government to formulate estimates for inclusion in the Budget.

Agriculture and allied activities are expected to grow at 5.4 per cent in 2010-11 compared to just 0.4 per cent in the previous financial year. While services such as trade, hotel, transport and communications improved to 11 per cent from 9.7 per cent, manufacturing remains static at 8.8 per cent.

PHOTO BY PHOTOS.COM

SOFTWARE UPDATE

Good news from the IT-BPO front. India still outsourcing leader.

THE INDIAN IT-BPO industry has once again exhibited buoyancy and maturity, reflected through a strong customer demand in 2010-11, says a recent release of the National Association of Software

& Services Companies (NASSCOM), India's premier trade body and the chamber of commerce of the IT-BPO industries.

It said the industry is estimated to grow by 19 per cent, earning US\$ 76

billion in 2011, US\$ 59 through exports alone. The domestic market has grown by 16 per cent, earning US \$ 17.27 billion. The sector will directly employ 2.54 million people, adds NASSCOM.

Som Mittal, President, NASSCOM said, "pent-up demand for IT-BPO services, return of discretionary spending, new business models that encouraged



first time buyers, and re-invented value propositions for existing ones,

were the key drivers of the industry performance. The industry showed broad based growth across mature and emerging verticals, core markets and new opportunities."

India's market share of 55 per cent in global outsourcing makes it the market leader and its export revenues will grow by 16-18 per cent in 2012, adds NASSCOM.

INDIA WATCH

\$ 22.5 Bn

India's exports in December 2010

Area	Population	Male	Female	Population Density	Urban Population
3,287,590 sq km	1.175 billion	613.75 million	552.15 million	361.1per sq km	350 million

Key performance indicators of the Indian economy, with patterns, trends and forecasts

India's Economic Outlook

Fiscal Year	2007-08	2008-09	2009-10	2010-11
GDP Growth	9.40%	7.30%	5.40%	8.50%
CPI	6.40%	9.30%	5.50%	9.5%

Source: RBI Survey of Professional Forecasters Q3

Mean Probability Pattern of Real GDP Growth Forecasts

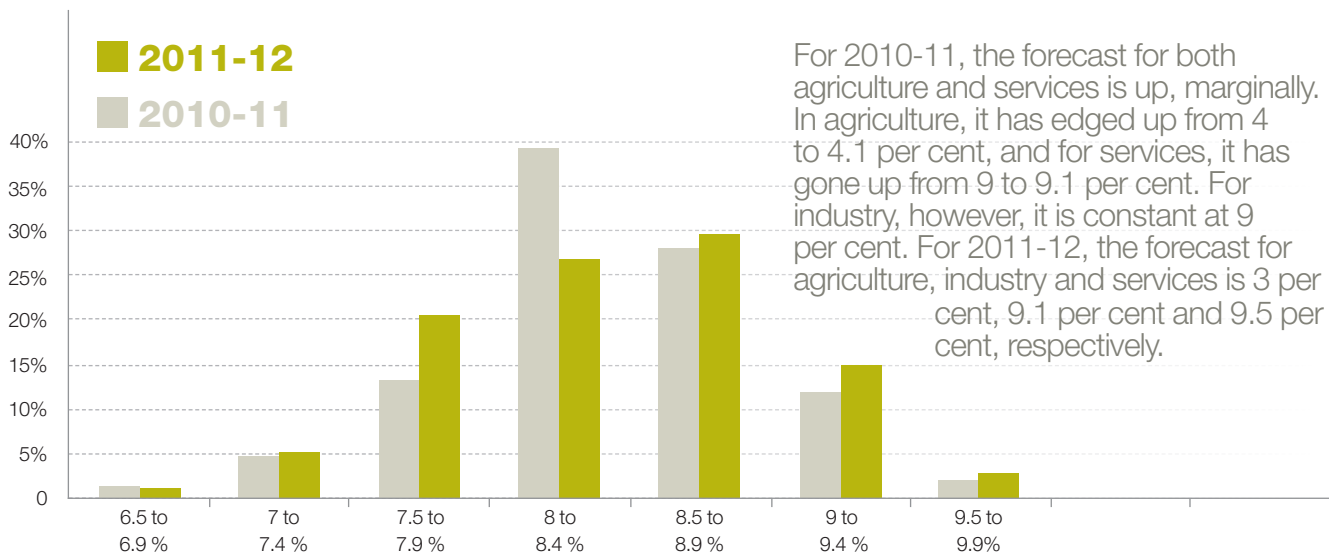


Chart 1: Year-on-Year Growth in IIP

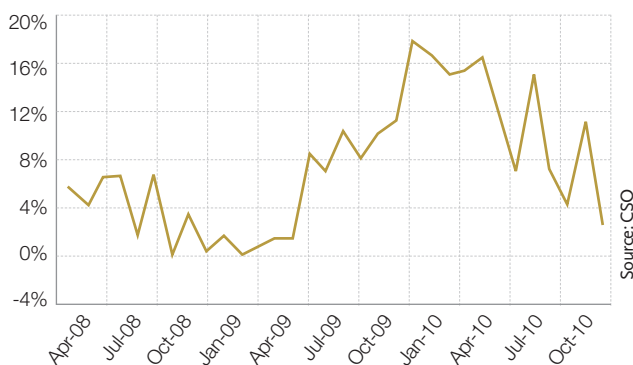


Chart 2: Year-on-Year Growth in Sectoral Indices

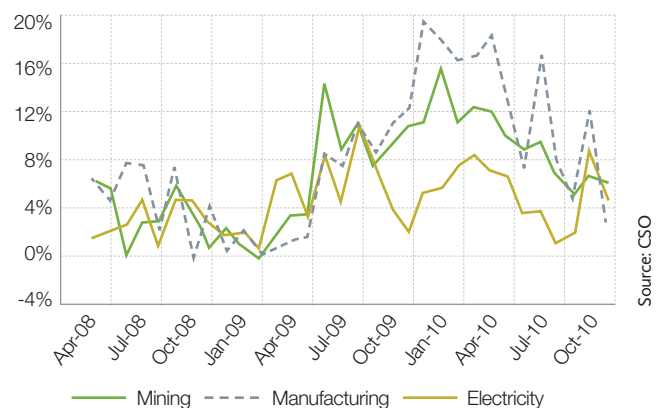


Chart 3: Contribution to IIP Growth in November 2010

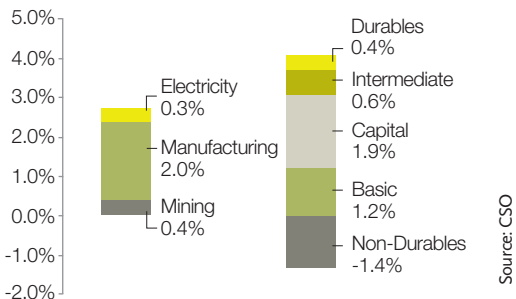
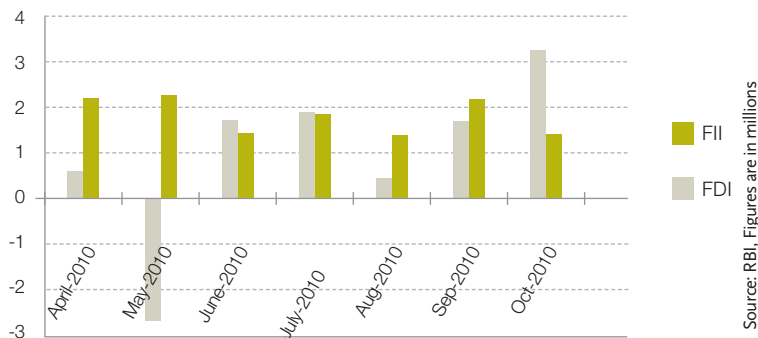
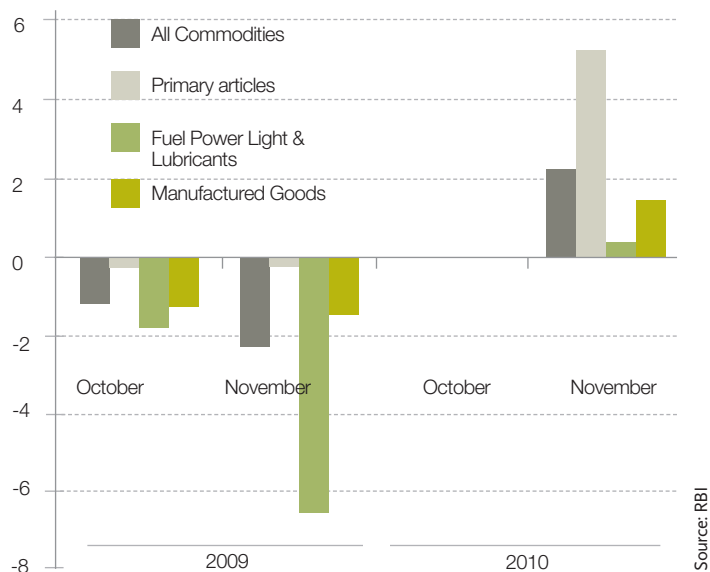


Chart 4: FDI & FII Inflows

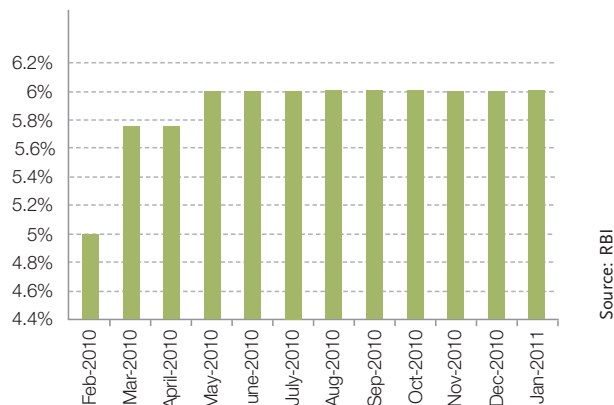


Monthly trends in Wholesale Price Index- monthly average (% change)

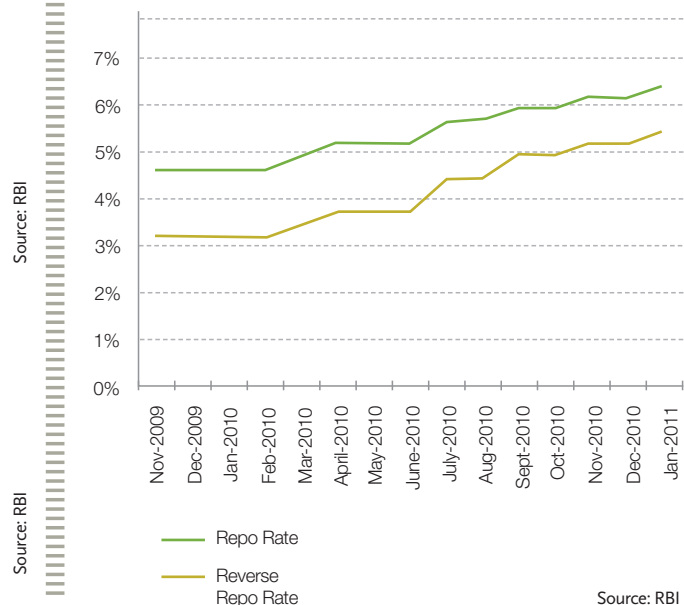


Key Macroeconomic Indicators

Cash Reserve Ratio



RBI Policy Rates



Stock Market


Date	BSE Sensex	% Change	S&P CNX NIFTY	%Change
1.10.10	20,445.04	12.35	6,143.40	12.29
1.11.10	20,355.63	-0.45	6,117.55	-0.43
1.12.10	19,850.00	-2.49	5,960.90	-2.58
3.01.11	20,561.05	3.59	6,157.60	3.30

Source: RBI

Currency Exchange Rate

Date	INR/USD	INR/GBP	INR/JPY	INR/EUR
Sep 2010	44.95	71.46	53.92	61.8
Oct 2010	44.43	70.3	53.34	61.12
Nov 2010	44.95	71.29	55.1	61.72
Dec 2010	44.7	69.77	55.11	59.9
Jan 2011	45.93	73.65	56.04	62.98

Source: RBI

An illustration of a family—a man, a woman, and a child—floating in space. They are holding hands and reaching towards a large, bright sun with radiating rays. The background is a gradient of purple and blue, with stylized, rounded clouds. The man is wearing a light blue shirt and pants, the woman is in a yellow dress with a purple shawl, and the child is in a white shirt and shorts.

Rise of the Indian Middle Class

ILLUSTRATION BY ANIL T

Conservative, hard-working and values-driven, the Indian middle class has worked relentlessly to establish itself firmly on an upward growth path. BY SHUBHA SINGH

Poorvi Chordia, 31, landed at New York's John F Kennedy airport early one freezing January morning, this year. A connecting flight took her to nearby Detroit, Michigan, where she resumed her duties as a resident doctor in a multi-speciality hospital. It was a long haul flight, a 15-hour non-stop journey from faraway New Delhi, India.

Poorvi's journey, however, began long before this January, or the last. It began in the early seventies, when her father moved from Udaipur in Rajasthan, to the commercial hub of Mumbai, then called Bombay. He had moved for a better life for his family. They were middle class people—educated, hard working and looking for work. Bombay held that promise. And it delivered.

Poorvi was born in 1980, and she graduated from medical school in 2001. She wanted to move to the US but her father had no money to send her abroad.

She got lucky, because just about then a host of loans became more freely available. Now, Poorvi not only earns a handsome salary in dollars but also remits thousands of rupees to her father back in India. She hasn't forgotten, however, her father's rickety motorcycle and their two-room tenement in Mumbai's suburb. Now, her father drives a Japanese car and has every gadget he needs and still has some money to spare to visit his daughter at least once every year. He still calls himself a middle class man.

There has been a fundamental shift in the very elements that defined the character of the Indian middle class. From being content with its place in the economy, as just above poor and way below the rich, it has now become aspirational and ambitious. And the change is showing. The Indian middle class has built upon its core strengths of education, hard work and values, to shift the entire scale up in such a way, that it can now be seen as just below the rich and far from being poor. It has put the two wheeler to rest and has graduated to the four wheeler. Its children go to good schools, find high paying jobs, carry dozens of credit cards and wear designer clothes. Most such households have air conditioning for each member of the family, a luxury beyond reach of the middle class, less than a generation ago.

Traditionally, the middle class has been the economy's main driver. It neither has the money nor the capacity to take risk. Therefore it works for the entrepreneur class and manages the worker class. In so managing the affairs of the entrepreneur class, this middle class of managers has built itself a solid constituency of trust and dependence. It is from this middle class, that almost all bureaucrats emerge, as do teachers, scientists, doctors, small entrepreneurs, traders and many more.

200 trillion

Projected size of the global economy (in US Dollars) by 2034, according to Andrei Sheifer, Professor of Economics, Harvard University, USA.

“Growth of the Indian middle class is associated with better governance, pro-growth reforms, even better infrastructure..”

— Vikram Nehru

Chief Economist,
Department for the
East Asia and Pacific
Region, World Bank

It is not just that this whole class of professionally qualified people earns and spends money. It is now a very powerful body of serious buyers, wooed passionately by manufactures and businesses. The Indian middle class constitutes a sustainable market for just about every category of products and services.

Obviously this has not happened overnight or by itself. Change has happened at the structural level, in legislation, policy making and implementation. From abolishing the licence Raj, to easing foreign direct investment norms, the government has changed itself substantially. The openness of the economy has created ample opportunity for growth and expansion. The middle class has seized this chance.

The numbers are also supporting this understanding of the new and expanded role of the Indian middle class. A report by the authoritative National Council for Applied Economic Research's (NCAER) Centre for Macro Consumer Research says that India's middle class currently accounts for 160 million people, roughly 13 per cent of the population. This number will jump to 267 million by 2016, nearly a fifth of the total population. By 2026, however, the powerful Indian middle class will have more than half a billion people, nearly 40 per cent of the total population of that time, creating the world's fifth largest consumer market, according to the report released in February this year.

In January last year, Homi Kharas, renowned development economist with America's influential Brookings Institute in Washington, authored a comprehensive document for the OECD Development Centre's Global Develop-

ment Outlook. In the document, titled 'The Emerging Middle Class in Developing Countries', Kharas said India's population would touch 1.6 billion by 2039, and its middle class could total a whopping one billion people, almost 90 per cent of the entire population.

On the question of what constitutes middle income, renowned economists have differing opinions. Professor of economics at the Massachusetts Institute of Technology (MIT), Esther Duflo has worked on this arithmetic for a long time. So has Abhijit Banerjee, a Harvard University Ph.D in Economics and Ford Foundation International Professor of Economics at MIT. Martin Ravallion is director of the Development Research Group of the World Bank. He holds a Ph.D. in economics from the London School of Economics, and has taught economics at L.S.E and Princeton University.

Both Banerjee and Duflo suggest that middle income be taken as between US\$ 2 and 10 per person per day. That translates to a little more than INR 90 to about INR 454 per person per day. That's a monthly income of INR 2,700 to 13,620, and an annual income of INR 32,000 to approximately 164,000. Ravallion raises the upper limit to US\$ 13 per person per day.

Using household income as the criterion, the NCAER study, however, defines a middle family with an income in the range of INR 340,000 to 1.7 million, annually (nearly US\$ 7,500 to a little more than US\$ 37,000).

"India's high GDP growth and rapid urbanisation will result in the expansion of the middle class," says Rajesh Shukla, director of NCAER's Centre for Macro Consumer Research (CMCR).

Although it accounts for only 13 per cent of the population, the middle class owns nearly half of

267
million

Projected
size of the
middle
class by
2016

500
million

People who
will consti-
tute India's
middle
class by
2026:
NCAER

all cars in India, more than half of all computers and air conditioners, a little less than half of all credit cards, and a fifth of all television sets, says the study.

It says that a typical such household spends one half its income on daily expenses, and saves the other half. "Which means a middle class family has strong purchasing power to spend on durables and other items," adds Shukla.

Homi Kharas argued that there is good reason to be optimistic about a new Asian consumerism emerging at a scale and timing sufficient to replace the forecast shortfalls in US consumer demand growth. Kharas says that the economies of China and India have reached a tipping point where large numbers of people will enter the middle class and drive consumption.

India's rapid economic growth has set the stage for fundamental change among its consumers. The same energy that lifted the standards of the poor, is creating a massive middle class centred in the cities. A new study by the international consulting firm McKinsey's Global Institute suggests that if India continues its recent growth, average household incomes will triple over the next two decades and it will become the world's 5th-largest consumer economy by 2025.

Along the way, spending patterns will shift significantly as discretionary purchases capture a majority of consumer spending. India's potential should make it a high priority for most consumer goods businesses, but to succeed in this market they must overcome major challenges.

Private consumption has already played a much larger role in India's growth than it has in that of other developing countries. In 2005 private spending reached about INR 17 trillion (US\$ 372 billion), accounting for more than 60 per cent of India's GDP, so in this respect the country is closer to developed economies.

The middle class has played a special role in economic thought for centuries. It has been thought of as the source of entrepreneurship and innovation—the small businesses that make a modern economy thrive. Middle class values also emphasise education, hard work and thrift. Thus, the middle class is the source of all the needed inputs for growth in a neoclassical economy—new ideas, physical capital accumulation and human capital accumulation.

More recently, former Harvard University professor of Economics and current professor

Although it accounts for only 13 percent of the population, the middle class owns nearly half of all cars in India...

— Report of NCAER's Centre for Macro Consumer Research.

of sociology at Boston College, USA, Juliet Schor argued that it is a “new consumerism” that defines the Indian middle class. She calls it a constant, “upscaling of lifestyle norms; the pervasiveness of conspicuous, status goods and of competition for acquiring them.”

Another Harvard professor of Economics Andrei Sheifer emphasises the willingness of the middle class consumer to pay a little extra for quality as a force that encourages product differentiation and feeds investment in the production and marketing of new goods.

Sheifer says that by 2034, the global economy may be worth US\$ 200 trillion, and its economic centre of gravity would shift to Asia, which accounts today for 34 per cent of global activity, but by 2034 could account for nearly twice as much of the global output. Three giant economies, China, India and Japan, would lead Asia’s resurgence.

What is important is that it is no longer necessary to question whether India can be unique in achieving rapid growth without strong manufacturing growth. The Indian model of service-led growth is giving way to a more traditional development model where both industry and services drive growth and job creation.

According to McKinsey, this middle class comprises government officials, college graduates, rich farmers, traders, business people and professionals. These groups choose what they will consume, rather than be driven by the necessities of life. Such discretionary choices, reflecting the tastes of the new Indian middle class, will dominate consumption patterns.

Vikram Nehru, Chief Economist and Director of the Poverty Reduction and Economic Management and Private and Financial Sector Department for the East Asia and Pacific Region of the World Bank, says “Growth of the Indian middle class is associated with better governance, pro-growth reforms, even better infrastructure. As people gain middle class status, accumulate savings, and educate themselves, they are likely to use their greater political clout to press for accountable government. This includes the rule of law, property rights (they now have more to protect!), and greater public goods supportive of growth, including better infrastructure, education, fewer trade restrictions, and economic stability. Interestingly, the larger the middle class a country has, the more likely it is to reduce poverty faster.”

160
million
Current size
of India's
middle class:
NCAER

Homi Kharas argues that the point at which the poor start entering the middle class in their millions is the “sweet spot of growth.” It is the moment when poor countries can get the maximum benefit from their cheap labour through international trade, before they price themselves out of world markets for cheap goods or are able to compete with rich countries in making high-value ones. It is also almost always a period of fast urbanisation.

US-based World Values Survey is an authoritative global investigation of sociocultural and

Rama Bijapurkar

Thought leader, market strategist, author and management consultant Rama Bijapurkar of Mumbai is a keen commentator on social and cultural change in India. A product of the Indian Institute of Management, Ahmedabad, Bijapurkar serves on the boards of ratings firm CRISIL, Axis Bank and Godrej Consumer Products, among others. She is the author of “We are like that only - Understanding the Logic of Consumer India”.

Bijapurkar says she believes that the supply market, which once went about looking for pockets deep enough, did not anticipate the huge consumer body the middle class has become. The burgeoning Indian middle class is driving India’s consumption economy. For the supply side to effectively utilise its potential, she says, sales and production benchmarks should be based on the potential of the opportunity and not on past sales. With steadily rising incomes, confidence is higher— together, they feed the aspirations of the middle class. Bijapurkar says she wants the Indian business to intellectually grasp the vastness of the market.

Bijapurkar says a clear analysis will reveal that the demand is for well priced products, where there is almost always a rush of customers. This crush is true even as India sees several high end malls go empty. The creamy layer of this middle class may not be cushy enough to absorb expensive products. She says correct market analysis will ensure that the Indian business will build upon the existing consumers. Is the Indian supply market prepared for the eternal question which is rearing its head? What next? The middle class is ready and waiting to buy, from where it will get value for money. It is, after all, these values which propelled its upward movement in the first place, she adds.



political change, and is conducted by a network of social scientists at leading universities around the world. Between interviews conducted in 1990 and 2001, the survey showed a remarkable shift in attitudes of the Indian middle class. In both surveys, parents of school-going children were asked about the qualities they considered important for their children. The qualities were: independence, hard work, thrift and saving, and determination and perseverance. This is how the difference showed: independence (30 per cent in 1990 to 56 per cent in 2001); hard work (67 per cent to 85 per cent); thrift and saving (24 per cent to 62 per cent); and determination and perseverance (28 per cent to 46 per cent). In other words, the changing values associated with middle class families are already visible in India, and these changing values are conducive to economic development.

An increasing number of products are being geared towards the middle class population. In the transport industry, which has traditionally been dominated by rail travel, newer cars like the Tata Nano (which retails for a little more than US\$ 3,000) and low-cost airlines have enabled the middle class to be increasingly mobile. The use of financial services by the middle class has also increased significantly. Credit card growth has ballooned over the last several years.

Hong Kong based investment firm CLSA Asia-Pacific Markets conducted a survey of the Indian middle class for Deutsche Bank, last year. In its report, CLSA said the middle class demands better healthcare and education. In addition to the benefit of strengthening human capital stocks and thus productivity, this also leads to more private expenditure on healthcare and education and thus improvements in existing infrastructure. The survey showed that education was the third largest household expenditure behind essentials such as rent, mortgage and groceries. In terms of investment, (already around 35 per cent of GDP), the growth of the middle class will also make an impact as it will force more business to expand or new business to take root.

The World Bank estimates that a threefold increase in civil engineering graduates would be necessary to meet India's large infrastructure needs. To ensure that their children and they themselves have the necessary skills, families often spend significant amounts

“India is undeniably an important future growth market of the world—it is young (it has 450 million people below the age of 21) and it is just beginning its consumption journey.”

— Rama Bijapurkar
Thought Leader,
Management Consultant

of their incomes on private education and supplemental training (such as computer training) to remain competitive.

Last year, a well-researched Asian Development Bank (ADB) report had said that innovative and cheaply priced products targeted at India's booming middle class were helping to spur domestic consumption and growth. In a special chapter of Key Indicators for Asia and the Pacific 2010, its flagship annual statistical publication, ADB said the growth of the middle class has meant an additional annual sector spending of US\$ 256 million. This growth has also spawned low-cost, locally made products and services such as the Nano car, the Godrej Group's US\$ 70 battery-operated refrigerator, and cheap mobile phone rates, the report added.

The special chapter, titled “The Rise of Asia's Middle Class,” also noted that the substantial Indian middle class had created new avenues for employment and entrepreneurship, and a louder voice for improved public infrastructure and services.

In a special report in 2009, reputed business magazine The Economist had quoted American economist Diana Farrell as saying that the middle class begins at roughly the point where people have a third of their income left for discretionary spending after providing for basic food and shelter. This allows them not just to buy things like fridges or cars but to improve their health care or plan for their children's edu-

The substantial Indian middle class has created new avenues for employment and entrepreneurship, and a louder voice for improved public infrastructure and services.

— Asian Development Bank
Report on Asia and the Pacific 2010.

cation. Usually, an income of that size requires regular, formal employment, with a salary and some benefits, that is, a steady job—another key middle-class characteristic. The income needed to have a third of it left over after meeting basic needs also varies from place to place.

Two years ago, Farrell was working for consulting firm McKinsey's, and had written an elaborate article in *BusinessWeek*, quoting research from the McKinsey Global Institute (MGI). The research showed that within a generation, the country would become a nation of upwardly mobile middle-class households, consuming goods ranging from high-end cars to designer clothing. It said that in two decades India would surpass Germany as the world's fifth largest consumer market.

The report named two income groups—seekers, earning between INR 200,000 and 500,000 (US\$ 4,376-10,941) annually, and strivers, with incomes of between INR 500,000 and 1 million (US\$ 10,941-21,882) annually. These groups would become India's huge new middle class, said the survey. While their incomes would place them below the poverty line in the United States, things are much cheaper in India. When the local cost of living is taken into account, the income of the seekers and strivers looks more like US\$ 23,000 to 118,000, which is middle class by most developed-country standards. Seekers range from young college graduates to mid-level government officials, traders and business people. They enjoy a lifestyle that

By
2027,
India will
surpass
Germany
to become
the fifth
largest
consumer
market in
the world:

— Report on
the Indian
middle class by
McKinsey Global
Institute (MGI).

most of the world would recognise as middle class and typically own a television, a refrigerator, a mobile phone and perhaps even a scooter or a car. Although their budgets are stretched, they scrimp and save for their children's education and their own retirement.

Strivers, the upper end of the middle class, tend to be senior government officials, managers of large businesses, professionals and rich farmers. Successful and upwardly mobile, they are highly brand-conscious, buying the latest foreign-made cars and electronic gadgets. They are likely to have air conditioning, and can indulge in an annual vacation, usually somewhere in India.

As the wave of income growth rolls across the society, the character of consumption will change dramatically over the next 20 years. A huge shift is underway from spending on necessities such as food and clothing to choice-based spending on categories such as household appliances and restaurants.

Take cars, for instance. At a little more than US\$ 3,000, Tata Motors' Nano is probably the cheapest car in the world. Historically, a new car was out of reach of the vast majority of Indian households. But as incomes rise, car prices fall and financing becomes available to more people, a huge pool of pent-up demand will be released. In a tie-up with the State Bank of India, car manufacturer Maruti is now offering customers the chance to buy one of its cars with lower monthly payments than if they were buying a motorcycle.

In FMCG, too, affordability continues to be the hallmark of successful new consumer-product launches. An example of keen pricing is the US\$ 66 washing machine built by Videocon, a consumer-electronics company. The washer was successful not just because it was cheap, but because its design was attuned to the needs of Indian families—for example, it will automatically finish a wash after a power outage—and it dropped costly standard features such as a drying cycle, unnecessary in India's hot climate.

Smart companies recognise that old consumer habits die hard. For generations, rural Indian families have either made their own clothes from bolts of cloth or had the local tailor make their garments relatively cheaply. Many remain suspicious of ready-to-wear clothes. Arvind Mills, India's leading denim manufacturer, overcame these misgivings by offering a "ready

Within a generation, the country would become a nation of upwardly mobile middle-class households, consuming goods ranging from high-end cars to designer clothing.

— Report on the Indian middle class
McKinsey Global Institute.

to stitch" jeans kit to local village tailors. It also distributed sewing-machine attachments for stitching the heavy denim and trained the tailors to use the kits. Within two months, more than a million of these Ruf 'n Tuf kits were sold.

In her hugely successful book "We are like that only: Understanding the logic of Consumer India," IIM, Ahmedabad alumna and thought leader Rama Bijapurkar argues that the dominant logic that there would be a sharp battle between tradition and modernity in India, has changed. The future of India must be read in the context of coexistence, fusion, the loosening of rigid structures and new ways of doing old things.

In middle class India, there is an engaging mix of generations, each rooted in its beliefs, customs and practices. For those who were born before Independence, things are very different, their thinking is socialist to a large extent. Their children have grown up differently, but still fairly socialist in attitude. The new generation has grown up in an entirely different time of liberalisation and, openness and competition. Then Bijapurkar talks of five economies, namely agriculture, manufacturing, government, services and IT. Each has its own set of belief systems and behaviour.

She quotes a Goldman Sachs report saying that in the future, the world's largest economies may not be the world's richest economies. Being individually poor but collectively rich differentiates emerging market economies from developed ones. This places a lot of power in the hands of the Indian middle class, essentially because it is collectively hugely powerful.

Bijapurkar's book speaks of India's prospects with tremendous optimism. She says India is undeniably an important future growth market of the world—it is young (it has 450 million people below the age of 21) and it is just beginning its consumption journey.

Until 1991, there was greater government control on business. After the liberalisation of 1991, the government took a more liberal view of its role in regulating business. Since then there has been a jump in GDP growth rate and a spurt in national income. Consumer confidence and aspirations have been upbeat as they are seeing visible improvements. There is now a lot more to buy, it's cheaper and better than ever before.

India's shift to a consumer society will only accelerate as more people become "connect-

ed" via mobile phones, the Internet and TVs, and as advertising becomes a more prominent part of people's lives. The real growth story has been in mobile telephony—600 million subscribers and counting.

"Perhaps, one of the primary reasons that the Indian middle class is called so, is that it walks the middle path, not so much that its income level is somewhere in the middle. It has grown in its aspirations and has achieved a lot, too. But it still adheres to its time-tested family values, relies on good education, follows a solid work culture and lives a life of moderation, in general," says Prof Rajen Gupta, professor of operations research at the Delhi-based Management Development Institute. An IIT-IIM product himself, Gupta hails from a middle class family, and says he understands the mindset of the class. "It may have evolved over the last few decades, but is still deeply rooted in its past, especially when it comes to the core values of good education and a decent, law-abiding lifestyle."

He agrees that aspirations have zoomed sky high, and that is changing the character of the Indian middle class substantially. "But if you examine closely, this has always been a class that constantly aspires to improve. That is the reason why it sends its children to the best schools. That is also why so many Indian students go the US every year. Have we not been beating the Chinese to the top spot in sending our children to American universities? What for? For better education, and a better life. That is being aspirational, and it is a positive thing," adds Gupta.

Prof Gupta is right. According to the reputed US-based Institute of International Education (IIE), that administers the premium Fulbright Programme and Gilman Scholarships, India has sent more students to the US in the last six years, than any other nation. Only last year, China wrested the top spot that it had lost to India. "This is driven largely by the spirit of the great Indian middle class. It educates itself, arms itself well, plans out its life path carefully, and then, little by little, edges up. That's why, even in the US, Indians are the most successful immigrant community, who send their children to the best schools, own the best houses and cars and live a life of moderation," says Prof Gupta.

Poorvi Chordia fits that description to the 't'. Driven and inspired, the Indian middle class is working relentlessly on bridging the rich-poor divide, and has so far succeeded.■

“One of the reasons that the Indian middle class is called so, is that it walks the middle path, not so much that its income level is somewhere in the middle.”

— Rajen Gupta
Professor, Operations
Research, MDI.



COMPANY DASHBOARD

- ▲ GLOBAL SALES: US\$ 60.7 billion
- ▲ PROFIT: US\$ 2.04 billion
- ▲ EMPLOYEES: 95,000 worldwide

DELL: POWERED ON

In just four years of having started full-scale operations in India, the world's second largest computer manufacturer wrests number one position in the rapidly expanding domestic PC market, and looks poised for even bigger successes, worldwide. BY VIKRAM SINGH.

IN THE TIME that it takes you to reach the end of this sentence, ten Dell computers will have been shipped out to customers worldwide. That's more than 110,000 Dell computers every day.

Michael Dell is a visionary. But even he could not have imagined that the company he founded in his University of Texas dormitory, in 1984, would one day become one of the leading technology giants of the world. International business magazine Forbes places Dell 38th in its global ranking of the world's biggest companies, and names Michael Dell as the youngest ever CEO of a Fortune 500 company.

Once known only for sturdy, brick-like, low-end PCs, Dell has now become the buzz word in computing. Its snazzy line up of designer and high-end laptops is as much at home in plush corporate boardrooms as in weathered student backpacks and salesmen's briefcases.

On the Internet, one comes across many 'reason-to-buy-a-Dell' lists, posted by happy customers. Some of the lists have cited even up to a 101 reasons for buying a Dell system. Michael Dell has his finger firmly on the pulse of the market.

Then called PCs Limited, Dell's fledgling company produced its first originally designed computer in 1985. The "Turbo PC" sold for US\$ 795. PCs Limited advertised its unique idea and systems in national computer magazines, sold directly to consumers, and custom-assembled each ordered unit. The company grossed more than US\$ 73 million in its first year of business.

Dell Computer Corporation was born in 1988. Its first international foray was through expansion in Ireland. In 1988 itself, Dell's market capitalisation jumped from US\$ 50 million to 80 million. In 1992, Dell Computer Corporation featured in Fortune magazine's illustrious list of the world's 500 largest companies.

Based on its overwhelmingly encouraging experience with individual buyers and their unique needs, Dell took to the Internet early. In 1996, the company began selling computers through its website. Continuously expanding, Dell added to

its product line televisions, handhelds, digital audio players, and printers. It acquired ConvergeNet Technologies in 1999 which was a first in its long list of acquisitions. In 2003, the company's expansion beyond computers was recognised with it being rebranded to "Dell Inc."

Now, Dell's products include personal computers, servers, data storage devices, network switches, software, and computer peripherals. It also sells HDTVs, cameras, printers and MP3 players.

Writing recently in news giant CNN and Fortune magazine's online column Fortune, on news portal cnn.com, commentator Anurag Prasad said that in

the US, Dell became a market leader through its online and direct made-to-order sales model. For India, however, it needed a change of strategy.

When Dell started full-scale operations in India, four years ago, world leader HP and Chinese computer maker Lenovo already had a strong presence in the country. HP had arrived in 1989, and its only competition was IBM, a company that Lenovo acquired later.

Although Dell had entered India in 2000, it was then focussed only on business and government orders. In 2007, it started full-fledged operations in India. That year, Dell sold less than 80,000 computers as it did not have a production base here, its distribution network was still developing and it took long for the systems to arrive from Dell's factory in Penang, Malaysia. By comparison, HP sold one million computers to Indian consumers.

In just four years, the story is very different. According to market research firm International Data Corporation (IDC), Dell has the largest share of the computer market in India. In the third quarter of 2010, Dell's share was 15.3 per cent, although followed closely by HP, at 14.7 per cent, said a recent IDC report on India's computer market. Dell sold 1.1 million desktops, laptops and notebook computers in India in 2010. HP followed closely behind, with one million, the report added.

Even though Dell's revenue from India is a little more than a billion dollars, it is less than two per cent of what the company earns globally. But India is emerging as the company's

OUTSIDE THE US,
INDIA IS THE ONLY
MARKET WHERE
THE COMPANY
OPERATES A
COMPLETE SET
OF CUSTOMER
CARE, FINANCIAL
SERVICES,
MANUFACTURING,
RESEARCH AND
DEVELOPMENT,
AND ANALYTICAL
SERVICES.

FROM A FIRM THAT BEGAN SELLING PCS OUT OF A DORMITORY ROOM, DELL NOW REACHES OUT TO 5.4 MILLION CUSTOMERS GLOBALLY, EVERY DAY, THROUGH ITS WEBSITES, ON THE PHONE AND IN PERSON.



fastest-growing market. According to the IDC report on the third quarter of 2010, Dell's India market has grown at nearly 55 per cent, year-on-year—the highest for any Dell market.

The CNN-Fortune report quoted M.R. Sundaresan, general manager of operations for Dell India as saying that the company did it all by first setting up a factory in India. "Manufacturing locally cut delivery time by almost 50 per cent and improved profitability," said Sundaresan.

Immediately, the waiting time for computers came down to about a week. Then the company set up its India retail model, installing high-visibility, exclusive outlets nationwide.

For distribution, Dell took a radically different path. Through an army of registered and trained sales affiliates, it reached out to retail customers in person, giving them a first-hand product experience. Sales jumped when Dell partnered with electronics retail chains like Tata group's Croma and Future Group's eZone, to set up its counters inside these shops.

Michael Dell

Dell's founding chairman Michael Dell, 45, is a University of Texas (Austin) dropout and a self-made billionaire. His net worth of US\$ 13.5 billion places him at number 37 in Forbes magazine's 2010 list of the world's richest people. He sits on the foundation board of the influential World Economic Forum and on the governing board of the highly reputed Indian School of

Business, Hyderabad, Andhra Pradesh in southern India. Having grown fast on the direct-sales model, Dell has kept its R&D costs low. Michael Dell's wife, Susan, created fashion label Phi, that sells through 24 boutiques worldwide.



On the after sales service front, Dell backed its warranty with onsite servicemen, who visited customers where they were—at home or at work—in 650 cities nationwide.

As Indians celebrate better access to data and mobile computing expands, Dell will benefit, too. It has diversified into smartphones, tablets, and printers. Its smart Vostro notebooks have the Indian small business buyer in mind. The company has spent more than half-a-billion dollars in the last two years to expand, especially through 14 strategic acquisitions. Its notable mergers and acquisitions include Alienware in 2006 and the nearly four-billion dollar purchase of global computing giant Perot Systems, two years ago.

India is an important market for Dell, having emerged as a local and global service delivery hub. Outside the US, India is the only market where the company operates a complete set of customer care, financial services, manufacturing, research and development, and analytical services.

From a company that began selling assembled PCs out of a dormitory room, it is no mean achievement that now, Dell boasts of reaching out to 5.4 million customers globally, every day, through its websites, on the phone and in person. On its website, www.dell.com, the company says it ships more than one system every second. Its website also says that Dell is the choice for 98 percent of Fortune 500 corporations, putting it in the top slot of PC providers around the world. It is in fact the largest PC provider to public sector customers in the U.S. The company has 60,000 certified agents, 41,000 service staff in 90 countries, 60 technical support centres and seven global command centres! The company's just-in-time manufacturing approach, minimises inventory costs.

US-based technology and market research company Forrester Research noted in a recent report that Dell's initiative to collect, interpret and respond to feedback had significantly improved its customer experience. Naturally, Dell received Forrester's prestigious Voice of the Customer Award for its focus on employee and customer collaboration.

The company is innovative about using environment-friendly packaging. Its facilities in Europe and the U.S work with 100 per cent renewable energy. Last year, Forbes magazine named Dell in its list of the world's Top 10 environmentally friendly companies. ■



Good Account

World Bank body stands guarantor for SEWA Bank's loan for self employed women. BY HEMANT KUMAR

You can easily say that a Mitaben in an obscure Gujarati village actually hired management graduates to develop a business plan for her. How else would you explain how GTN came into existence?

To understand how it all happened we must know what the Self Employed Women's Association (SEWA) is and what the Grassroots Trading Network (GTN) stands for.

Self employed workers either have their own small business or they sell their labour, without any fixed employee-employer relationship. They are poor, illiterate and vulnerable. But they are extremely economically active.

Ninety six per cent of all women workers are in the unorganised sector.

To empower such women, lawyer-activist Ela Bhatt of Ahmedabad, founded SEWA in 1972. Since most such poor women had no identification papers, assets or property, banks were wary of lending to them. They fell easy prey to unscrupulous money lenders, and often got caught in high interest rate traps.

SEWA now has more than 120 organisations under its sheltering umbrella and looks after the interests of rural and semi-urban workers. In 1974, it set up the SEWA Bank. The co-operative bank encourages women to save. Its attitude is empathetic and approach unthreatening. To make it easy for the

poor women, the bank takes deposits of as little as INR 40 (less than a dollar). In 2007-08, SEWA had more than 307,000 account holders, with deposits of nearly INR 74 crore (more than US\$ 16 million). Out of the deposits, the bank had advanced more than 103,000 loans, exceeding INR 32 crore (more than US\$ 7 million). This, when the bank operates only in Ahmadabad and a few districts of Gujarat.

SEWA felt the need to expand and to increase its capacity. But to integrate its 1.3 million members into a banking system, it would essentially have to lend more than its total savings, and for that, the bank would itself have to borrow.

But who would stand guarantor for the large amounts of money needed to fund this expansion? Not about to give up easily, SEWA got together with the Government of India and hired international consulting firm Accenture to put together a business plan. Manned by management professionals, Accenture advised the setting up of the Grassroots Trading Network (GTN). Its mission is the same as that of SEWA—to support and strengthen women workers.

After analysing SEWA's needs and limitations, GTN sourced the funding from three nationalised banks, and the International Finance Corporation (IFC), a member of the World Bank Group, has agreed to stand guarantor for loans of US\$ 10 million.

The IFC has funded several microfinance projects. Its mission statement could be that of SEWA's too : "To fight poverty with passion and professionalism for lasting results. To help people help themselves and their environment by providing resources, sharing knowledge, building capacity, and forging partnerships in the public and private sectors."

In a world that is set to look better, yes, a Mitaben from an obscure village in Gujarat can confidently say she hired the best minds in management to work on her business expansion plans.

For, she and more than a million self employed women like her, collectively own SEWA Bank. ■



Electrical Equipment: Plugged in and working well. Pg 25



Gems and Jewellery: The traditionally sound sector glitters in good health. Pg 28



Steel: High tensile industry is on rock solid ground. Pg 31

SECTORAL UPDATE



FMCG SECTOR

Seller's Delight

India is witnessing a striking increase in consumer spending, thanks to its large population and rapidly evolving consumer preferences. **BY CHARU BAHRI.**

India is on the move. Its fortune is reflected on the faces of more than a billion Indians. They're confident about their prospects, so much so, that India ranked first in a Nielsen Global Consumer Confidence survey conducted last year. This upbeat sentiment has made India one of the world's fastest growing fast moving consumer goods (FMCG) markets.

By 2025, India will become the fifth largest consumer market in the world

—McKinsey Global Institute

Whether personal care, household care, or food products, they're flying off the shelves, as per capita disposable incomes rise

and lifestyles rapidly evolve.

The FMCG sector's performance in the last five year period has been admirable. With 10 per cent annual growth since 2005 and no let up in demand during the slowdown, the industry is growing from strength to strength. Favourable demographics are likely to at least sustain, if not help this positive trend grow.

Burgeoning demand

The industry's strength lies in India's large population and its being one of the world's youngest nations —factors that determine the market's size and rate of growth. It's a US\$ 13 billion market, that is expected to grow to more than US\$ 33 billion in the next five years. The outlook for the next decade

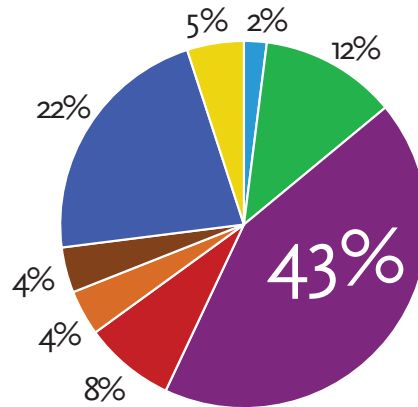
PHOTO BY PHOTOS.COM

is even more promising. A McKinsey Global Institute study, 'Bird of Gold : The Rise of India's Consumer Market', estimates the sector's growth based on a conservative assumption of India's gross domestic product (GDP) growing annually by 7.3 per cent between 2005 and 2025. It says that income levels will triple during this period, and in turn completely change the shape of the country's income pyramid. More than 290 million people will move from living in poverty to enjoying a sustainable life. India's middle class will also swell by 10 times, from 50 to 583 million. As a result, total consumption will quadruple, making the country the fifth largest consumer market by 2025. A large part of this will come from the cities but rural areas will contribute a healthy share too, accounting for 38 per cent of the demand.

According to Saloni Nangia, Senior VP and Head, Retail & Consumer Products, Technopak, "Demand is rising because of a combination of several factors. Income and per capita spend are rising. Growing awareness and increasing availability of popular international brands is also helping the FMCG market expand. Products and brands that were available only overseas, are now selling in nearby stores. People are more aware of what's available, because of greater exposure through the media."

Advantage India

The FMCG industry has a lot going for it. It boasts a well-established distribution network spanning six million retail outlets—two million in more than 5,000 towns and four million in 627,000 villages. Raw materials, both for food and personal care products, are available in plenty. There is also no shortage of cheap labour. With a presence across the value chain, from raw to mature products, companies are taking advantage of a significant cost advantage. For instance, India's well known dairy brand, Amul, sells milk as well as packaged dairy products like



SOURCE: DABUR INDIA LTD; 5TH MOTILAL OSWAL GLOBAL INVESTOR CONFERENCE, 2009.

cheese, butter, ice-cream etc. Amul's experience is leading others to think of backward integration, as a strategy to raise profit margins.

The sector also enjoys the government's full support. Up to 100 per cent foreign equity, or NRI and overseas corporate body investments, are automatically allowed in food processing segments such as coffee and tea. This includes investments for foreign technology agreements within specified norms. The government also recognises the food processing and agro industries as priority sectors. As such, industrial licenses are not required for most food and agro processing industries, barring items such as beer, potable alcohol and wines, cane sugar, hydrogenated animal fats and oils, and items reserved for exclusive manufacture in the small-scale sector. In recent years, excise duties have also been reduced. This has had a positive impact on the industry.

According to a recent report by market intelligence firm Business Market International (BMI), the total retail sales in India will grow from nearly US\$ 393 billion in 2011 to US\$ 675 billion by 2014. The highly optimistic forecast is based on strengthened economic growth, population expansion, the increasing wealth of individuals and the rapid construction of organised retail infrastructure.

INDIAN FMCG MARKET SEGMENTS

- Baby Care
- Fabric Care
- Food Products
- Hair Care
- Household
- OTC products
- Personal Care
- Others

Opportunities galore

Today, India's FMCG sector is characterised by intense competition between its organised and unorganised constituents. This is likely to gather momentum in the next five years, as more international chains enter the country and spend copious sums to convert consumers into brand loyalists. The share of organised retail is expected to increase from 5 per cent now, to 18 per cent by 2015.

Urbanisation is also opening up newer business channels for FMCG companies. Diverse retail formats

\$13 bn
Size of India's FMCG market.
Expected to cross US\$ 33 bn in 5 years

such as department stores, hypermarkets, supermarkets, speciality stores, and shopping malls are coming up across Indian cities. "These stores are changing the way FMCG products are pitched to prospective consumers. They now have the luxury of browsing through products in supermarket

lanes. These 'in your face' displays are increasing interest and usage," observes Nangia. The urbanisation rate is expected to increase from 30 to 45 per cent in the next four decades, adding nearly 380 million people to the urban consumer base. Naturally, consumption will grow and become more clearly categorised.

Lower-end brands are tapping

consumers who have so far bought unbranded products. Others will focus on consumers who are ready to upgrade to more evolved product categories, such as processed and packaged foods. “Demand for ready-to-cook and ready-to-eat food is poised to grow. Confectionary, cheeses, fruit-based processed food products, and beverages are also likely to see greater demand in the next few years,” says Nangia.

Some companies will also look to enhance their growth profile by reducing their dependence on relatively mature and competitive segments. Several players are already innovating in a big way, customising their existing product portfolios to tap new consumer segments. Emami has launched a men’s fairness cream. Nestlé India and Amul’s pro-biotic products, offering active ingredients in products for regular consumption such as yoghurt and ice-cream, are other examples. “The market for high value women’s personal care products has potential. Men’s personal care products are also currently underserved. There’s scope for more brands to enter,” Nangia adds.

Rural invasion

More than one-third of the consumers are rural — companies can’t afford to ignore them. Seasoned players like Hindustan Unilever understand all too well that offering good price points is the key to success in price-sensitive rural India. There, volumes must compensate for the lower margins.

Hindustan Unilever coined the term nano-marketing almost two decades ago, when it made a calculated entry into the rural segment by introducing its basket of offerings in small, affordable packages. Sachets of oil, shampoo, detergents, and beverages flooded the market, and were eagerly received by aspiring

“Consumers now have the luxury of browsing through products in supermarket lanes. These ‘in your face’ displays are increasing interest and usage”

—Saloni Nangia, Senior VP and Head, Retail & Consumer Products, Technopak.

rural Indians. As it turns out, moving early has yielded Hindustan Unilever significant benefits. Today, 45 per cent of its sales of household products come from rural areas. Likewise, 40 per cent of Dabur India Ltd’s personal products are consumed in the villages.

More recently, other branded players have sought to overcome the challenges of accessing and serving rural markets. They’ve tried to replicate Hindustan Unilever’s success strategy by launching product variants appealing to rural mindsets. GSK has launched Asha, a variant of Horlicks costing 40 per cent less than the original, for rural markets only. Britannia launched Tiger Iron Zor biscuits for low-income groups. And Nestlé has sought to capture the rural market by launching a mineral fortified, inexpensive variant of Maggi noodles, a household brand name.

doing everything to guard their market share.

As competition intensifies, advertising and marketing spends are on the rise, as are investments to strengthen distribution channels. This is unleashing a wealth of opportunities for the Indian media and logistics industries. It’s also leading to a phase of mergers and acquisitions, as players seek to consolidate their position and secure their long-term sustainability. KPMG’s report A Global View of M&A in Consumer Markets: 2010 and Beyond says that large size firms believe they have reached the limit of growth. They may look to improve margins by acquiring smaller players. Companies with limited financial muscle and brand depth will yield to their larger counterparts.

Recently, Godrej Consumer Products (GCPL) acquired Genteel to extend its leadership in the speciality liquid detergents category and acquired Swastik to consolidate its number two position in the personal wash category in India. According to Adi Godrej, Chairman, GCPL, “Continuing focus on optimising our category mix is also enabling us to improve our profitability. We continue to explore opportunities to strengthen our presence and competitive position in the home care, personal wash and hair care space.”

Growing outsourcing

By no means does consolidation of the industry mark the end of the road for smaller FMCG manufacturers. Outsourcing is gaining ground among the larger players, as many seek to farm out the manufacturing or processing of products to third party vendors and focus their ener-

\$675 bn
Expected size of Indian retail market in 2014

Mergers & acquisitions

The country’s FMCG scene is warming up as players move to win hearts in urban and rural India. On the one hand, large organised retailers, such as the Future Group, Shopper’s Stop, Reliance Retail and Aditya Birla Retail are expanding their footprint. On the other,

global retailers like Wal-Mart, Metro and Tesco are entering the market through franchises and partnerships in the cash-and-carry wholesale business. Multinational giants like Hindustan Unilever and Procter & Gamble are

gies on front-end marketing initiatives. Hindustan Unilever, for instance, has contracted manufacturers to produce the soaps, synthetic detergents and packaged tea it sells.

Interestingly, outsourcing is not limited to contracts for products intended to be sold in domestic markets. India is increasingly being seen as a cost-effective quality manufacturing base. As a result, multinational companies operating in the country have started sourcing products from local vendors to feed their global supply chain. For example, Procter & Gamble has outsourced the manufacture of Vicks Vaporub in Hyderabad. It's a win-win proposition. The low-cost output is exported to Australia, Japan and other Asian markets. It helps Procter & Gamble sustain or improve its margins with no loss of quality.

Going global

Another outcome of intensifying competition is that more and more Indian FMCG companies are going global. They're eyeing overseas markets such as the USA, UK, UAE, Sri Lanka, Bangladesh, Thailand, Afghanistan, South Africa and Mauritius for the next wave of growth, either through exports or establishing their own foreign subsidiaries.

Asian, Latin American and African markets are especially of interest since their demographic profile is similar to that of India.

Indian FMCG majors are also seeking to enhance organic growth with inorganic opportunities in emerging markets. For instance, Wipro Limited bought Unza Holdings Pte Limited of Singapore. GCPL has acquired Keyline Brands Limited

in UK, Rapidol and the Kinky Group in South Africa, in addition to its existing brands in Europe, Australia, Canada, Africa and the Middle East.

"As part of increasing our global footprint, we have also recently acquired Tura, a leading medicated brand in West Africa, Megasari Group, a leading household care company in Indonesia and Issue Group and Argencos, two leading hair colorant companies in Argentina," says Godrej.

"These companies are all poised to become global FDCG (food, drink and consumer goods)," says Nandini Chopra, executive director & practice head, Consumer and Retail Corporate Finance, KPMG in India.

Certainly, they're companies that first grew big in India, where opportunities in the FMCG sector abound. ■

ELECTRICAL EQUIPMENT

Transforming Fortunes

The electrical equipment industry is poised for major growth, thanks to the government's ambitious expansion plans. **BY CHARU BAHRI.**

The Indian electrical machinery industry, a sub-segment of the heavy engineering segment, primarily caters to the power sector. It is witnessing a healthy expansion, riding on the back of the government's ambitious power expansion policies.

Powering demand

'Power for all', the motto of the National Electricity Policy proposes to increase the annual per capita consumption of electricity to 1000 units by next year. Achieving this goal and fulfilling the burgeoning demand for power in the coming years would require significant investments in the electrical grid and capacity expansions – as much as an additional 161,000 MW of generation capacity by 2020.



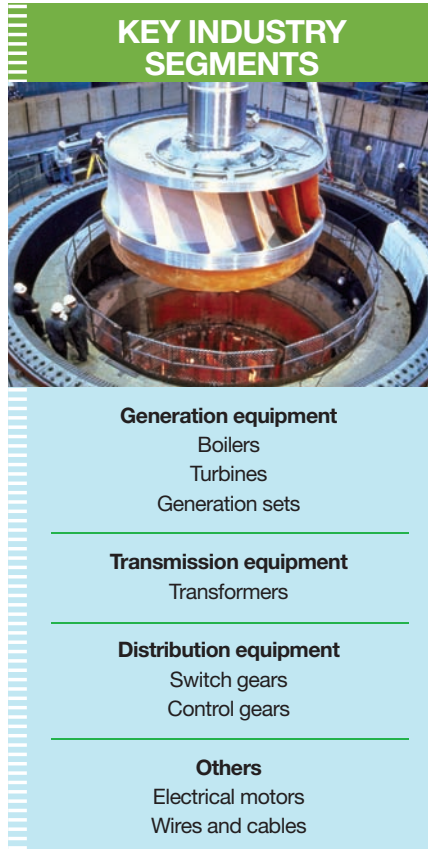
For the power network to achieve stipulated targets, the government launched the Accelerated Power Development Reforms Programme and Rajiv Gandhi Grameen Vidyutikaran Yojana. But that may not be enough. McKinsey's Powering India: The Road to 2017 report says investments of US\$ 600 billion will be needed by 2017 to meet India's growing demand for power. About half of this amount would be allocated to power generation, US\$ 110 to transmission, and the balance of US\$ 190 billion to distribution. Electrical equipment forms a huge component of this outlay. Its availability is also a key factor in achieving the planned expansions. Boilers, turbines, generators, and some critical equipment proposed to be supplied by Bharat Heavy Electricals Limited (BHEL), the forerunner of the industry fulfilling about 70 per cent of demand, have been in short supply. This shows how closely the power sector is tied to the electrical equipment industry.

PHOTO BY PHOTOS.COM

Vital role

McKinsey's report has actually suggested that creating a 30 gigawatt (GW) annual capacity for equipment manufacturing and its related supply chain, would necessitate standardising plant modules. This will also require reviving mothballed component capacity, unshackling Public Sector Undertakings by revamping internal approval norms and encouraging participation by local and national players.

Fortunately, government policy is changing. In a bid to do away with delays in executing power projects due to shortage of equipment, the government has told the National Thermal Power Corporation (NTPC) that it no longer has to buy its power generating equipment from BHEL. This has levelled the playing field for home-grown and overseas players operating in the market. Areva T&D India, a subsidiary of the globally operational Areva T&D, has been quick to spot and make the most of the change in policy. It was the first to build a 765 kV substation in



SOURCE: IBEF REPORT ADVANTAGE INDIA: ELECTRICAL MACHINERY 2010

India with NTPC in Chhattisgarh.

Participation, not only of domestic players, but also of overseas majors is vital to preparing the industry to meet the growing demand. Sensing the opportunities, global leaders are expanding their footprints in the country. Areva T&D India, for instance, has fast positioned itself as a trend-setter in high-voltage (HV) switchgear, a one-stop shop for the complete range of equipment needed for all stages in the transfer of electricity, from the generator to the large end-user. Already, around 70 per cent of load flow in India is managed by its automation solutions.

Destination India

Recently, Areva T&D India launched the country's first fully localized 765 KV transformer produced from one

of its eight new factories at three sites in Tamil Nadu and Gujarat, commissioned at a cost of about US\$ 208 million. With this investment, Areva T&D India can now supply an entire range of locally produced substations and equipment for the highest voltage levels, needed to meet the country's growing demand for extra high voltage technology and prepare itself for future ultra high voltage technology.

But relying solely on the organic route is a fairly long-drawn out process. So some global electric equipment companies are using their deep pockets to acquire their Indian peers and increase their foothold in the domestic market. Last year, French giant Legrand acquired the switchgear division of Indo Asian Fusegear for around US\$ 131 million, upping its market share from 11 to 23 per cent in one go. Rajeev Dalal, partner, transaction and advisory services, Ernst & Young, says India's switchgear and wire accessories market is worth US\$ 438 million.

The Indian electrical equipment market is growing at 20 per cent annually while there is stagnation in the developed countries. No wonder, companies are looking at sustaining their long-term prospects by entering the country's lucrative market. But it's not

23
Number of approved engineering Special Economic Zones (SEZs)

only players from developed nations. Electrical equipment manufacturers from neighbouring China are also being attracted by emerging opportunities in the Indian power sector, particularly by growing private sector participation in power projects. For instance, a number of private sector players are engaged in transmission and distribution, both

of which are major thrust areas since capacity has not kept pace with power generation. This has led to constraints in power evacuation from generating stations, especially from surplus to deficit regions and is preventing electricity

trading. Private sector companies are keen to adopt the latest HV technologies as opposed to transmission equipment suited for the 220 KV and 400 KV range.

Dongfang Electric Corporation Ltd, a leading power equipment manufacturer based in China has established Dongfang Electric India Ltd. to focus on the supply of power equipment. The company has bagged orders from JSW Energy, Lanco Infratech, East Coast Energy, some government managed companies and a few others. In future, it will look to work on the ultra mega power projects. Chint Power Transmission & Distribution, a key business unit of China's Chint Group, has bagged an order to supply capacitors and distribution transformers to a steel company.

Government support

Foreign Direct Investment (FDI) has a direct positive impact on the electrical equipment industry. It's helped the industry expand, grow more conscious about branding, and has improved product quality. This is mainly because the sector is technology intensive and requires significant investments. For example, as high tension switchgears are comparatively more technology intensive, multinational companies operating in this domain with access to latest technology have strong domestic growth potential. In a scenario where technology and product range are key differentiators, FDI and foreign tie-ups also help companies gain a competitive edge, by offering better product designs and upgrading their manufacturing capabilities and testing facilities.

Understanding this reality, the government has allowed the sector 100 per cent foreign direct investment (FDI) through the automatic route. Foreign technology agreements are also allowed under the same route, subject to certain conditions. After all, BHEL has exemplified how technical collaborations with leading global players can help absorb technology

and gain market supremacy. It counts General Electric of the USA; Sulzer of Switzerland; Hitachi of Japan; Siemens of Germany; Asea Brown Boveri of Canada; Flakt of Sweden; Alstom of France; and Weir of the UK, as some of its overseas collaborators.

Overseas electric equipment majors attracted to the country can also hope to benefit from a favourable business environment. The government has sought to ensure the engineering sector has adequate infrastructure by developing enough Special Economic Zones (SEZs) as well as an industrial corridor across centres of development. These include 23 formally approved, nine approved in-principle, and 16 notified SEZs. Tariff protection on capital goods and custom duties on a range of equipment have been removed. R&D activities are also being given incentives.

Integrated supply

Leading domestic manufacturers have gained a competitive edge from having a wide range of capabilities and product offerings, with an ability to provide end-to-end solutions to cater to large consumers. ABB Limited, for example, is engaged in every aspect of design to execution of its wide range

of power systems. Being a provider of end-to-end solutions having an extensive countrywide presence and a network of over 800 channel partners has helped the company bag some prestigious projects. "The Delhi Metro and Bengaluru Metro, India's first barge mounted substation, are some of the most visible ABB power projects in India. We believe that our comprehensive skills and commitment to R&D have helped bring us this far, and will help fuel our further expansion plans," says Lalit Tejwani, head of rail business, IMA (India Middle East and Africa), ABB Limited.

Likewise, Crompton Greaves is extensively engaged in designing, manufacturing and marketing high technology electrical products and services related to power generation, transmission, distribution as well as in executing turn-key projects. Sudhir M Trehan, managing director, Crompton Greaves says he expects next year to be better than the ongoing year – revenues could grow anywhere between 16 and 18 per cent. This year, industrial and consumer segments are both doing well. Industrial is growing at about 20 per cent and consumer at about 27 per cent. Power systems are growing a bit sluggishly this year, but Trehan says he expects growth in power systems to come back to double-digits next year based on the sizeable demand and order inflows. Doing better and better innovation in products and reducing the material content are helping Crompton Greaves maintain its margins.

Cummins India Limited also sees itself as a single window provider for complete top-of-the-line energy and power solutions. And now, MNCs from Schneider to Siemens and Panasonic-Anchor are trying to pitch themselves as comprehensive providers to retail and industrial consumers. As competition intensifies, the national and urban railways, core manufacturing sectors like steel, and the real estate sector also can enjoy a larger variety of higher quality equipment.

PRODUCTION OF KEY SECTORS

(Apr to Nov periods)

Boilers & turbines	2008-09: US\$ 1181.30 million
	2009-10: US\$ 1361.28 million
(Steam/Hydro)	2008-09: US\$ 464.20 million
	2009-10: US\$ 540.61 million
Electric generators	2008-09: US\$ 197.04
	2009-10: US\$ 248.74

SOURCE: ANNUAL REPORT 2009-10, MINISTRY OF HEAVY INDUSTRIES AND PUBLIC ENTERPRISES

CUMULATIVE FDI INFLOWS

Period:

April 2000 to January 2010

Amount:

2124.8 US\$ million

Proportion:

Comprises 2 per cent of total

FDI inflows

SOURCE: WWW.IBEF.ORG

Growing exports

Several factors favour India as a manufacturing base for electrical machinery. The country has no dearth of skilled labour, available for much less than in developed nations in the East and West. India also has ample raw materials to meet the demands of the engineering industry, such as mild steel and aluminium. Since materials account for nearly 50 per cent of the industry's operating costs, their ready availability augments India's cost advantage.

Global long-term players in the industry have gone all out to make the most of this benefit. ABB Limited, for instance, is increasingly leveraging Indian operations for products, services, engineering and R&D. Its India

subsidiary for instance, has successfully combined its global know-how and local skills, establishing itself as a 'global' factory for high voltage 72.5 KV circuit breakers, medium voltage outdoor circuit breakers, magnetic actuators and transformers.

Cummins India Limited is emerging as a global sourcing hub in the engine segment for Cummins Inc., its parent company. The company is already the single worldwide source of K-38 power generation engines as well as K-38 marine (Mo/M1), earlier manufactured in UK, apart from the V-28 engines. It's also a source for 50 litre power generation engines (K-50). Exports from India have grown significantly in recent years, buoyed by the quality of products

India produces, which are comparable to products developed in factories overseas. In future, it would also like to expand its forte in the components segment.

Companies looking to set up base in India are closing in on locations after reviewing the presence of supply sources of power – hydro, thermal, wind, solar, and so on – and the presence of supporting engineering industries. In this context, Gujarat, Maharashtra, Uttar Pradesh, and Tamil Nadu score high on these factors. Undoubtedly, some regions will offer better prospects. But the fact remains that the Indian electrical equipment sector as a whole is in a good position. ■

GEMS AND JEWELLERY

Shining Metal

The gems and jewellery industry is a timeless business that has constantly adapted to changing times and preferences. **BY CHARU BAHRI.**

Indian elders traditionally recommended dividing savings into three parts – one holding in gold, one in land, and one in cash. Interestingly, this piece of advice still seems to be followed by current generations, if a World Gold Council (WGC) report is anything to go by. India currently has one of the highest saving rates in the world; estimated at around 30 per cent of total income, of which 10 per cent is invested in gold, says the WGC's India: Heart of Gold executive summary. In a way, this savings method is backed by solid sense – gold investments are an acknowledged hedge against inflation. And as an asset class, the report finds that gold was less volatile than stocks, moved independently of stock indices, and out-

PHOTO BY PHOTOS.COM



performed select domestic equity indices in the past five years, thus making it the ideal investment to diversify a portfolio.

Number one position

The penchant for gold has given India more than 18,000 tonnes of above ground gold stocks worth a staggering US\$ 800 billion. According to the WGC, this holding represents nearly 11 per cent of the global reserves. It also makes India the world's largest consumer of gold. Last year, India demanded gold worth US\$ 19 billion – that's 15 per cent of the global gold market. Demand has been growing at 13 per cent over the last decade, and from the looks of it, there's no slowdown on the horizon.

An industry report by market analysis firm RNCOS says the market will continue growing at a CAGR of 13 per cent. The report is called Indian Gems and Jewellery Market Forecast to 2013. At that rate, the market will cross US\$ 26 billion by 2012 – in spite of rising gold prices. "The industry is currently worth nearly US\$ 22 billion. We expect it to cross US\$ 29 billion by 2015," says Sandeep Kulhalli, vice president – marketing, Tanishq, a Tata enterprise.

Tradition explains India's romance with gold. Indians see gems and jewellery as a legacy passed from one generation to another. "But demand is also keeping up with the rising prices because disposable incomes are rising," points out Shushmul Maheshwari, CEO, RNCOS. "The Indian industry is, by and large, in a growth mode. This is improving lifestyles across the board, not merely in the metro cities. We're seeing demand rise in tier-2 towns – some of these towns that weren't exposed to industries hit by the slowdown are flush with money to invest and indulge their desire for jewellery," adds Kulhalli.

Industry trends

Improving lifestyles and urbanisation are changing consumer preferences for the shiny metal. "Jewellery used to be synonymous with traditional heavy gold sets, which accounted for nine-tenths of the market," says Kulhalli. Now, jewellery studded with diamonds and coloured precious and semi-precious stones is gaining ground with Indi-

an consumers. "This trend is improving the prospects for organised retailers of jewellery, since conventional jewellers don't address these segments as well," he adds.

Urban consumers exposed to western lifestyles, primarily through travelling overseas, are helping fuel the growth of more wearable branded jewellery, especially machine-made products and designs that are popular abroad. According to Maheshwari,

"Branded jewellery is associated with better services, premium quality products, and attractive exchange policies. This segment

is expected to grow more than 40 per cent in the coming years. In comparison, the traditional jewellery segment will only see single digit growth (6 to 8 per cent), primarily driven by growing demand in international markets and domestic demand in tier-2 and tier-3 towns and rural areas." No wonder Kulhalli opines, "We expect to double our turnover by 2015."

The Indian gold market has traditionally followed a seasonal cycle, with demand peaking in the cooler months of September to March, deemed auspicious for marriages. Gold also used to be more in demand in years following a good monsoon season, as sufficient rainfall boosts rural incomes. Now, however, frequent fluctuations and rising prices are likely to even out demand across the year.

Diversifying market

Platinum is coming into its own, too, as Indians seek novelty in their holdings of precious metals. Sales of platinum jewellery are also gaining momentum owing to firm gold prices. Figures released by the Platinum Guild International (India) show that in the last decade, the number of outlets selling platinum jewellery increased from just 12 to more than 300. The guild predicts that the number of such outlets will touch 1,000 in a couple of years. Platinum jewellery is being pitched to consumers aged 20 to 40 years, a group that has high disposable income and is willing to experiment.

Indian consumers are also increasingly buying diamonds – the country is already the third largest consumer of polished diamonds, after the US and Japan. Credit rating agency Crisil says it expects the diamond industry in India to remain stable this year owing to improved prices and steady demand. In fact, Maheshwari of RNCOS says that though gold will continue to be the most

Gold ownership per capita	Indian Demand for Gold
India: 0.4 ounce	Jewellery: 75 per cent
Russia: 0.4 ounce	Investment: 23 per cent
USA: 0.5 ounce	Decorative &
UK: 0.5 ounce	industrial use: 2 per cent
Saudi Arabia: 3.0 ounces	
Italy: 0.7 ounce	

SOURCE: WORLD GOLD COUNCIL "INDIA: HEART OF GOLD" REPORT

preferred metal for Indian consumers in the long-term, any fall in its demand will be comfortably offset by the intensifying demand for platinum and diamond jewellery.

Organised investments

Parallel to the growth of the organised retail sector, the government has spearheaded efforts aimed at bringing small and unorganised bullion traders on to a larger national platform. As a result, the Bombay Bullion Association (BBA) and the Indian Commodity Exchange Ltd (ICEX) have entered into a strategic tie-up to improve trading practices. It will help leverage BBA's and the public sector MMTC's nationwide networks to provide multiple delivery centres across the country. This is expected to encourage wider participation in bullion trading, thus deepening the market and harnessing the pan-India investment potential.

Private sector initiatives are also helping boost the demand for gold, especially for bullion. Holdings with leading Indian gold exchange traded funds (ETF) have multiplied nearly four times, from three tonnes in 2008, to 11 tonnes now. These include the Kotak Gold ETF, Quantum Gold Fund, Gold Benchmark Exchange Traded Scheme, Reliance Gold Exchange Traded Fund, UTI Gold Exchange Traded Fund, SBI Gold Exchange Traded Scheme, and the Religare Gold Exchange Traded Fund. The WGC believes that there is a strong case for growth in gold ETFs, given the appetite

for gold investment from mutual funds and pension funds.

India Post, the country's national postal service, now sells certified gold coins through 700 of its post offices, nation-wide. Reliance Money acts as the vendor for this project, which is conducted in association with the WGC. The WGC is also running gold micro-finance schemes with the Muthoot Pap-pachan Group, Kshetriya Financial Services, and Mimo Finance, mostly in south India, aimed at encouraging and assisting daily wage earners to buy good quality gold to safeguard their wealth against economic crises and save towards future family obligations. Such endeavours improving accessibility to reliable gold are acting as catalysts to further India's tryst with gold.

On its part, the All India Gems & Jewellery Trade Federation (GJF) is looking into ways to encourage the industry to adopt best practices and streamline its working, since this would help family-run businesses evolve into corporate-style enterprises. To this end, it held the first-of-its-kind leadership summit for the jewellery industry in January, this year.

Government initiatives

The gems and jewellery industry has a lot going for it. India has a large pool of skilled manpower well-versed in using the latest computer-aided design systems. Lower labour costs mean that hand-crafted jewellery can be designed and manufactured at competitive prices. It costs only US\$ 10 to cut and polish one carat of diamond in India, compared with US\$ 17 in China and US\$ 150 in Belgium. This significant price advantage has made India the world's largest diamond cutting and polishing centre in the world, where more than nine out of ten pieces of diamond are cut and polished. Most of these units are located in Surat in

the western state of Gujarat, India's diamond processing hub, which contributes more than 80 per cent of the diamond processing industry's revenues.

The government is going all out to support the gems and jewellery industry, for the valuable foreign exchange it earns for the country. It has recently formulated rules to ensure faster clearance of import and export consignments containing jewellery and gems. It has introduced measures to promote gems and jewellery exports, such as providing interest subvention of 2 per cent to labour intensive export sectors and duty drawback facilities. Special Economic Zones and Gems and Jewellery Parks developed in cities like Hyderabad, Vishakapatnam and Chennai offer the industry technology-enabled environments conducive to growth. These zones are also encouraging overseas brands to set up shop in the country.

In order to show solidarity with the World Diamond Council's statement to set in place stringent measures to eliminate the trade in conflict gems, the government has also tightened the certification process for international trade. The Central Board of Excise and Customs has banned the import and export of rough diamonds that aren't Kimberley Process certified.

Certification for diamonds and jewellery has played a major role in promoting brand India. It has especially encouraged diamond jewellers to move up the value chain, from being polishers of rough diamonds to manufacturers and exporters of jewellery. Seeing this success, the government is formulating an international compliance code for units manufacturing costume jewellery.

The global costume jewellery and accessories market is estimated at more than US\$ 16 billion and is generally understood to

“India is mainly exporting to UAE and Hong Kong. The GJEPC's initiative is to promote Indian jewellery in USA, China, UK, the Middle East, CIS countries and Russia”

—Rajiv Jain, Chairman, Gem & Jewellery Export Promotion Council (GJEPC)

Exports
Apr to Dec 2010 US \$ 27.58 billion
Apr to Dec 2009 US \$ 19.55 billion
Imports
Apr to Dec 2010 US \$ 23.84 billion
Apr to Dec 2009 US \$ 18.29 billion

be a rapidly expanding market. But India's exports in this category only amount to US\$ 53 million, showing that there's a huge opportunity waiting to be tapped.

Growing exports

The Gem and Jewellery Export Promotion Council (GJEPC) expects gems and jewellery exports from India to grow by 15 to 20 per cent this year.

India's exports of gem and jewellery products in the first three quarters of the ongoing financial year grew a little more than 41 per cent over the previous year. Other export segments showing a steep growth during the period include rough diamonds, coloured gemstones, non-gold jewellery, and gold jewellery. Overall gems and jewellery imports were up by 30 per cent. Imports of rough diamonds rose 25 per cent.

According to Rajiv Jain, Chairman, GJEPC, “India is mainly exporting to UAE and Hong Kong. The GJEPC's initiative is to promote Indian jewellery in countries like USA, China, UK, Middle East, CIS countries and Russia.”

The GJEPC has also launched a series of events to promote India as a preferred source for jewellery matching global lifestyle trends. These include the India International Jewellery shows, IIS Signature show, seminars and workshops, and an India Pavilion at major international trade exhibitions such as Basel World, Hong Kong show, JCK Las Vegas, and Jewellery Arabia. The blend of modern and traditional design and manufacturing techniques available in India gives the country a unique position in the global jewellery market.

India's domestic gems and jewellery market is also arguably the only one of its kind. For these reasons, falls in demand during periods of price rise are unlikely to be anything more than temporary, during which consumers adjust to increased prices, in a graph that is steadily moving north. ■

STEEL INDUSTRY

Made of Steel

An influx of overseas technology and funds bodes well for the Indian steel industry. **BY CHARU BAHRI.**

The Indian steel industry has come a long way since Jamshedji Tata set up the country's first integrated steel plant in 1907, under the iconic Tata Iron & Steel Company (TISCO), now Tata Steel. India's rich iron ore reserves, ranked fourth-largest in the world, and sufficient coal deposits, give the steel industry a significant cost advantage. India's substantial pool of technical manpower also ensures low labour costs per unit, commensurate with skill.

Prime position

Iron and steel was the first core sector to be liberalised and freed from pricing and distribution controls back in 1990. A decade and a half later, the government's New Industrial Policy further opened up the sector. Now, the sector is exempt from compulsory licensing and can import foreign technology as well as receive foreign direct investment up to certain limits.

These timely measures, coupled with the falling demand for steel in developed nations, are paving the way for global steel mills to enter the country. Central Asia and the Asia Pacific region are emerging as attractive investment propositions for global steel majors looking to sustain their profitability in the long term. Within this region, India is a favoured destination, with its buoyant economy assuring growing domestic consumption.

Current production levels do not fulfil the country's demand for steel. In 2009, India produced nearly 60 million tonnes (MT) of steel, but it also consumed almost 57 MT of it.



Demand drivers

"Normally, India's demand for steel is one-and-a-half times its gross domestic product (GDP). The GDP is growing at nearly 9 per cent. The demand for steel is, naturally, growing at close to 13 per cent. We expect this trend to continue, as all the major sectors of the economy like infrastructure, auto, white and yellow goods, and manufacturing have done pretty well," says Vikram Amin, Executive Director, Essar.

As steel consumption gathers momentum, the growth rate will further accelerate. "The government plans to invest nearly half-a-trillion dollars on infrastructure in the current five year plan, doubling it to a trillion dollars in the next plan. This itself will give the steel industry a major boost," adds Amin.

Untapped demand

India has no shortage of long steel products commonly consumed by the con-

struction industry. But some specialised items used by contractors are still not being produced in the country, such as larger diameter reinforcement steel, reinforced steel meshes, rail tracks, and hollow sections used for commercial buildings. Steel imports also include flat products for the automobile industry. Another potential focus area is products that would simplify manufacturing in the packaging, engineering, appliances, furnishings, electric goods and public transport vehicles sectors.

This demand remains untapped largely because Indian steel majors have not allocated enough funds to research and development. As a result, they are late in adopting the cutting-edge technology needed to produce such products. The minimal allocation to R&D in turn could be attributed to high interest rates on capital. At nearly 14 per cent, interest rates in India are twice as high as in the US and five times that in Japan.

Steel manufacturers are also grappling with sharp price hikes of key inputs – iron ore, coal and energy. The manufacturers are responding by creating direct linkages to the source. Developing captive mines is one such solution, albeit a long-term one. Earlier, global raw material prices were declared annually, but steel manufacturers are now forced to accept quarterly pricing issued by major mining companies. These quarterly rates are dependent on spot prices. Put together, these uncertainties affect profit margins, according to a report, Global Metals Practice, by international consulting firm KPMG.

Win-win partnerships

The industry is countering these challenges by entering into win-win joint ventures with leading international players. Over the last three years, there have been 44 mergers and acquisitions, aggregating nearly US\$ 17 billion. Most of these deals were driven by the aim of achieving resource security.

Last year, the world's fifth-biggest steelmaker, JFE Holdings Inc of Japan (JFE), entered into its first partnership with a foreign steelmaker, JSW Steel Ltd of India (JSW). The billion-dollar deal gave the Japanese firm a nearly 15 per cent stake in JSW. It is said to have been prompted by India's emergence as the world's second-fastest growing automobile market. The sector grew by 30 per cent last year, second only to China.

This buyout gives JFE a quick, firm foothold in the Indian auto-grade steel market, much faster than if it had built a greenfield plant on its own. JFE will now target India-based Japanese car-makers, such as Suzuki Motor Corp, Toyota Motor Corp and Honda Motor Co. The car makers would benefit from a cheaper supply route to sheet steel, much easier than importing from Japan. As for JSW, the deal gives it the much needed capital to cut its high-cost debt, expand production, and access cutting-edge technology used to manufacture the outer panel for automobiles. It may also improve

“The government plans to invest nearly half-a-trillion dollars on infrastructure in the current five year plan, doubling it to a trillion dollars in the next plan.”

—Vikram Amin, Executive Director, Essar.

its bargaining power with raw material producers, if the partners jointly source inputs. Sajjan Jindal, vice-chairman and managing director, JSW Steel Ltd said, “This money will be used to de-leverage our balance sheet and also for our working capital needs. It will give us access to much-needed technology to short circuit the learning curve in making more and more automobile and specialised steel as demands in our country expand. It will also improve productivity and maintenance practices. It will help us to reduce costs by 3 to 5 per cent and help add 10 per cent volume in the auto space.”

Destination India

The JFE and JSW combine is not the first of such deals. JFE's larger Japanese rival Nippon Steel Corp, has entered into a partnership with Tata Steel for producing automotive cold rolled flat products at the Tata's plant in Jamshedpur in Jharkhand. Nippon Steel will transfer its technology for the production of high-grade, cold rolled steel sheets for automotive applications, including skin panels and high tensile steels. It will produce high-grade cold rolled sheet steel, critically needed by the automobile industry. Japan's Sumitomo Metals has partnered with Bhushan Steel to provide the Indian

company technical know-how for its steel plant in Orissa.

Ernst & Young's far-sighted report 'Indian Steel Industry 2009: Squeezed, But Strong' suggested that joint ventures were bound to happen. “In the long-term, capacity in the commodity industry has to move to low-cost centres and India is well-placed with abundant high-quality iron ore, qualified manpower and competitive capital costs owing to low land and construction costs,” said Navin Vohra, partner & national leader – Metals & Mining, Ernst & Young. So more acquisitions and stake-buyouts may be on the cards.

Domestic consolidation

Domestic partnerships are also the flavour of the day. India's largest engineering conglomerate Larsen & Toubro and state-owned Nuclear Power Corporation of India Limited have entered into a joint venture to manufacture specialised steel and forging products. And JSW is acquiring a controlling stake in Ispat Industries for US\$ 3 billion. The acquisition would enable Ispat to strengthen its balance sheet, utilise its capacity more productively, save value-added tax, reduce its freight charges significantly, and focus on markets close to its plants in Maharashtra. Once the transaction is completed, JSW will emerge as the largest player in the steel industry, even bigger than the Steel Authority of India Limited, with a combined annual capacity in excess of 14 million tonnes.

After all, India's demand for steel is growing faster than its production capacity. The fundamentals are intact, not merely in the short-term, but for decades to come. And that's just the domestic market. The worldwide consumption of steel is also expected to double in the next quarter of a century. Companies can benefit from these emerging opportunities – all they need to do is to focus on quality and retaining the country's low-cost advantages. From the looks of it, they have the steely resolve to go the whole way. ■



LEADER BY DESIGN

Fresh out of Stanford, 45 years ago, engineer-businessman Azim Premji seized opportunity after opportunity to steer Wipro to world leadership status in IT services. **BY RUCHIRA MITTAL.**

Barely out of his teens, Stanford engineering graduate Azim Premji took the reins of a little known company in 1966. Called Western India Vegetable Products Ltd., it was set up in 1945 in Amalner, Maharashtra, to produce edible oil and soap. It was the parent company, and in 1977, the name Wipro came from it—Western India Products. Premji began diversifying into technology in the 70s. When IBM left India in the late 1970s, he saw the opportunity to get into the computer business, becoming the first Indian company to market locally-made PCs in 1975. When the Indian economy began to open up in the 1990s, he started to build Wipro into a global business process outsourcing (BPO) powerhouse. Premji is still the company's chairman.

Now, the six billion dollar Wipro is one of the world's largest IT services companies. It provides consulting, business process outsourcing (BPO), business technology services, enterprise application services, infrastructure management, testing, product engineering, engineering design and product support. It also leads in consumer products and lighting solutions.

Working With Responsibility

On its website, Wipro says it is only the third Indian company to be included in the Dow Jones Sustainability World Index (DJSI World) for 2010-11. The assessment process for inclusion in the list is based on stringent standards, and only 334 companies worldwide have made the list so far.

According to Dow Jones, the indices track the financial performance of the world's leading companies in terms of corporate sustainability performance. These are a set of global benchmarks which include the best-in-class companies on a global scale, as well as a set of European, North American, and Asia Pacific indices that include sustainability leaders on a regional scale.

Based on an internationally recognised and ratified, transparent and independent methodology, the rigorous assessment process is verified externally by consulting firm Deloitte. The assessment creates value for companies and corporate sustainability creates value for shareholders.

On the environment front, too, Wipro has scored significant victories. Wipro has the most comprehensive and integrated

portfolio of sustainability solutions in India, according to the Carbon Disclosure Project 2010 - India 200 Report, that was backed by 534 institutional investors with US\$ 64 trillion of assets under management.

Prepared by WWF-India, in partnership with The Confederation of Indian Industry (CII), the report analyses how India's top 200 companies, by market capitalisation, are driving innovation and taking action to embrace a low-carbon future. In its fourth successive year in India, the report focusses on the level of the companies' understanding of risks and opportunities, actions taken to reduce their carbon footprint, policy engagement and finding strategic advantages.

The Carbon Disclosure Project (CDP) operates the only global climate change reporting system on behalf of 534 institutional investors and some 60 purchasing organisations such as Dell, EADS, PepsiCo and Walmart.

The report quoted Wipro as saying: "We have one of the most comprehensive and integrated portfolios of sustainability solutions for customers. Our portfolio covers clean energy and energy efficiency, green computers, green IT and green lighting. The first three alone accounted for US\$150 million of revenues during 2009-10, representing more than 2 per cent of our total revenues."

With more than 800 clients, the company employs upward of 100,000 people at 72 global delivery centres in 55 countries worldwide. Its areas of operation include financial services, retail, transportation, manufacturing, healthcare services, energy and utilities, technology, telecom and media.

Among the top three offshore BPO service providers in the world, Wipro owns 136 patents and invention disclosures. It was the world's first software company to earn the coveted Capability Maturity Model Integration (CMMI) Level 5 certification. The tough-to-please Carnegie Mellon Software Engineering Institute's CMMI is a globally-recognised, rigorous methodology of processes that makes software firms highly effective.

One of the world's largest third party research and development services providers, Wipro is everywhere. Most of the technology that you come across in daily life - aircraft, automobile navigation systems, cell phones, computing servers, drug delivery devices, microwaves, printers, refrigerators, set top boxes, TVs - will find a Wipro component in them.

In the 1990s Wipro built a reputation across domains for a series of products and services including consumer care (Wipro Shikakai, Wipro Baby Soft), branded hydraulic cylinders, products (Wipro branded PCs, laptops, peripherals), and IT (Wipro Technologies and Wipro Infotech), while forging strategic partnerships globally.

Among the group companies, Wipro Consumer Care and Lighting has grown rapidly. Wipro EcoEnergy, the renewable energy services arm of Wipro works in the areas of renewable and alternative energy. Wipro Infrastructure Engineering delivers precision-engineered, world-class hydraulic cylinders, components and solutions, and truck hydraulic components to Original Equipment Manufacturers (OEMs) globally in the infrastructure and related industries. The company has recently entered the specialised and lucrative industrial water treatment business. Wipro GE Healthcare, a joint venture with GE, manages clinical information, among other things.

Primarily an IT services company, Wipro has a range of services. Its Business Technology Services combine information strategy, business collaboration, business integration and managing IT risk, across the value chain of the enterprise. Wipro's Enterprise Application Services help companies improve productivity. Its offerings include enterprise resource planning (ERP), supply chain management and customer relationship management (CRM).

Wipro Business Process Outsourcing (BPO) is a leading provider of BPO services focussing on the complex, voice and non-voice based segment of customer-care services. With nearly 500 players, India's domestic



“Essentially, leadership begins from within. It is a small voice that tells you where to go when you feel lost...”

—Azim Premji, Chairman, Wipro

BPO market is set to touch US\$ 7 billion by 2013. It is evolving into third-party ‘transformational outsourcing’ relationships from the existing captive dominated market structure. This implies that rather than merely running isolated processes for customers, BPOs would engage more deeply to identify and transform core business processes to add greater market value in the ‘creation and delivery of end products and services’.

Wipro also has a strong presence in consulting. In software development and deployment, testing the written code for how well it has been written, makes up almost a third of the total software development lifecycle. Every defect found early in the software development lifecycle saves millions of dollars of revenues for the companies. Wipro offers the entire range of testing services for leading global software development companies.

Wipro Lighting started in 1991 and has already become one of the fastest growing lighting companies in India. It has acquired a leadership position in commercial lighting and is moving strongly in domestic lighting, too. In both compact fluorescent (CFL) and fluorescent tube lamps (FTL), Wipro has a diverse range of products that go from the basic to the higher end decorative range. Wipro also markets a whole range of quality desktops, notebooks, datacentre systems and enterprise mobility products.

The company has harnessed the

value of organic growth with the business sense of acquisitions. In IT, it acquired Spectramind in 2002 and the Hyderabad based GE Medical Systems Information Technologies. Acquiring the energy and utilities consulting practice from American Management Systems Inc in 2003 helped Wipro consolidate its IT service business, bringing key customers including some of the largest US electric and gas utilities and energy suppliers. In 2003, it acquired the research and development labs of Ericsson in India, consolidating its strength in the telecom space, acquiring valuable skill sets in telecommunications research.

Ever since it diversified into the lighting and baby care business in 1991, the company has become a serious player in Fast Moving Consumer Goods (FMCG). In 1998, it launched its highly successful branded computers and systems and the very next year, became India’s number one company in market capitalisation. In 2000, it was listed on the New York Stock Exchange (NYSE).

Wipro Consumer Care acquired Northwest Switches in 2007, to strengthen its Lighting Division. It also acquired the ethnic soap brand, Chandrika and the wellness brand Glucovita – an energy drink. Wipro Consumer Care’s acquisition of Singapore’s Unza Holdings in 2007, for US\$ 246 million has, however, been one of its biggest deals. Unza is South-east Asia’s largest independent

manufacturer and marketer of personal care products, and has operations in over 40 countries. Wipro Consumer Care has a huge range of products from toilet soaps to baby care products to office modular furniture. Acquiring Unza and its 48 brands took Wipro’s brands to 63, making it the third largest Indian FMCG company, in league with Marico Ltd, Dabur India Ltd and Godrej Consumer Products Ltd. In consumer goods, Wipro’s Santoor soap is an established brand, extended into talc and liquid soaps. Wipro Baby Soft is the second largest player in baby care products and is the only company having all products for baby care from nipples and bottles to diapers.

Wipro, however, is not just about acquiring but about giving, too. In perhaps the biggest individual philanthropic contribution ever, Azim Premji donated almost INR 9,000 crore (nearly two billion dollars) last year to his endowment trust for destitute children. The trust will fund the activities of the not-for-profit Azim Premji Foundation that works for underprivileged children. The foundation engages 2.5 million children in more than 17,000 schools across India.

A speech Premji gave at the 37th Convocation of the Indian Institute of Technology (IIT), Delhi, in 2006, describes his philosophy and the way he has led Wipro: “... challenges, as much as opportunities, bring out the best from talent and youth. This was the first thought that came to me as I stepped into the Wipro factory at Amalner. I was 21 and had spent the last few years at the Stanford University Engineering School in California. Many people advised me to take up a nice, cushy job rather than face the challenges of running a hydrogenated oil business. Looking back, I am glad I decided to take charge instead. Essentially, leadership begins from within. It is a small voice that tells you where to go when you feel lost...” ■



PHOTO BY PHOTOS.COM

Waste to Wealth

Imagine standing at the edge of the ocean, feet sinking into luxurious white sand. There is beauty as far as the eye can see. Touched by such beauty, you bend to cup some water in your hands. But you recoil in horror. Your hands come away dragging out ugly, straggly shards of plastic which cling stubbornly, to your skin. In one stroke, the beauty you just experienced, turns into ugliness. This is not a dream. It's all true.

Between stunning Hawaii and beautiful Japan, there is an area of the Pacific Ocean where ocean currents meet. Called the North Pacific Gyre, it is twice the size of Texas, and should have been pristine and pure. But it is suffocating in 3.5 million tonnes of trash, says the renowned Algalita Marine Research Foundation of Long Beach, California, USA. Its studies have shown that plastic fragments outnumber zooplankton 40 to 1 in the area. The Gyre resembles a plastic soup, where pieces of plastic are not just floating on the surface, but are also suspended in the water column.

It isn't just the sea, the land is no less polluted. According to America's authoritative Environmental Protection Agency (EPA), the US produces more than 230 million tonnes of waste each year—enough to fill more than 82,000 football fields edge-to-edge with six-foot high compacted garbage. If just four per cent of the world's population generates more than one-fourth of the planet's waste, one can only

Rao's process converts plastic into high quality fuel without producing toxic by-products

Earlier plastic-to-fuel technologies left unmanageable quantities of toxic catalyst residue

imagine what the rest of the planet is suffering.

The biggest threat to our planet is from plastic waste.

Scientists have theorised that since plastic is made from petroleum, it can be turned back into fuel. The idea is that it will not only remove harmful plastic from the environment, but also turn it into usable fuel. Entrepreneurs have tried, but haven't found just the right technology. Most plastic-to-fuel processes are either not commercially viable, produce inferior quality fuel, harm the environment, or handle only a few types of plastic.

However, an Indian engineer has developed a process that can revolutionise plastic waste conversion worldwide. T Raghavendra Rao of Mumbai produces high quality fuel from waste plastic, without producing harmful by-products. His process is highly cost-effective and can handle plastic waste of any kind.

Most plastic-to-fuel technologies fail in the quality of fuel they produce. The catalysts they use, remain in the fuel they produce. "That leaves you with 500 kg of catalyst in a 25 tonne-a-day plant," says Rao. Such a high volume of toxic residue is environmentally unacceptable.

That's why Rao set up STEPS, for Sustainable Technologies and Environmental Projects, in Mumbai. STEPS uses a proprietary catalyst that helps convert plastic into a mix of liquid fuel, liquefied petroleum gas, and coke that can turn into fuel pellets. The fuel can run furnaces and



The STEPS technique produces 25,000 litres of fuel per day at an operating cost of a little more than US\$.25 a litre

generator sets, and can even be refined to make petrol, kerosene, diesel and light diesel oil. And the LPG generated from the process is sufficient to power the conversion plant itself.

“Our process leaves no catalyst in the residue, which is anyway free carbon that can be compressed into pellets and used as fuel in furnaces,” adds Rao.

Rao says that just 15 large cities of India produce nearly four million tonnes of waste every day, of which almost 200,000 tonnes is plastic. “We are focussed on turning waste into wealth.” It sounds like magic and is, indeed, magical.

Rao is one of India’s, and perhaps, one of the world’s finest eco-entrepreneurs. He has received encouraging results from tests in the Netherlands, West Asia, and Malaysia. STEPS is expanding globally and setting up plants which can process 25 tonnes of

plastic a day, in Austria, Italy, Germany, and the Netherlands. Set up at a cost of US\$ 2 to 3 million each, these plants are not considered expensive.

The good news does not end here. Rao’s technology can produce up to 25,000 litres of petroleum a day, at an operating cost of Rs 12 a litre—just a little more than a quarter—excluding the cost of raw material.

STEPS says the fuel they produce meets the standards prescribed by ASTM International, a US-based regulatory body that sets product quality and safety standards for the industry worldwide. “The wonderful thing about the STEPS technology is that its outcome is so positive; its application can be world changing,” says Jerry Llewellyn, president of Amera Consulting Group in Texas, USA.

James Vance, project manager at IC2 Institute at the University of Texas

which evaluated the “marketability” of STEPS says “Competing systems from Alphakat (Buttenheim, Germany), Ozmotech (Victoria, Australia) and Plas2Fuel (Washington, USA) exist, but they have limitations of emissions, selective plastic input as well as high capital cost due to low processing efficiency.” Vances’s report on STEPS clearly put Rao’s innovative technology way ahead of any competition worldwide. In 2007, STEPS won an award from the India Innovation Growth Programme. The programme is a joint initiative of aviation giant Lockheed Martin, the federation of Indian Chambers of Commerce and Industry (FICCI), and IC2. It helps innovative Indian technologies find markets worldwide.

T.R Rao is not resting on his laurels. Apart from plastic, the STEPS technology can also work on organic waste. The company has a joint venture in Malaysia with Greenbase Sepadu Sdn Bhd, and has successfully tested Rao’s technology on branches from which the palm fruit (used to make palm oil) has been harvested.

Closer home, the STEPS technology may be one way to efficiently handle the mounting e-waste in the country. STEPS has developed seven waste conversion technologies. Of these, five technologies have been commercialised. There are others in various stages of development; Rao is a man hard at work.

There are some other technologies that STEPS has developed. Most of them are self-explanatory: they include Refinery Waste to Fuel conversion, Agriculture waste to Fertiliser, Biomass to Energy, Grey Water Treatment and Chemical Free Algae Control.

As the world grapples with waste disposal, Rao is confident there will be no dearth of raw materials for his plants. He says that nothing is waste till it is wasted and he has shown the world that these are not mere big words.

STEPS is taking measured but certain steps towards ensuring our planet stays green. ■



EXPRESS INNOVATION

Inspired innovator revives
dying treadle presses with
cheap, easy conversion
kit. **BY VIKRAM SINGH**

In this age of digital convenience, the inconvenient is phased out. When was the last time you went to a printer and heard the rhythmic working of the treadle press? I know you are asking, what is a treadle press? It is a foot-operated letter press of a bygone era in printing. For, most of us either use desktop printers or digital offset. But there was a time, not too long ago, when millions of Indians earned their livelihood from the now obsolete, abandoned and nearly forgotten treadle press. Satish Deb of Bhilai in Chhattisgarh, however cannot forget it. The dawn of the digital age had almost wiped out his family's only source of livelihood. But he did not sit wringing his hands in despair. Instead, he decided to beat the odds by adapting the treadle to modern printing standards. He has converted the slow and cumbersome foot-operated treadle press into a smart screen printing press, and has a US patent for his innovation.

In a nation where nearly 85 per cent of the printing presses are still treadle-operated, digital technology is inexorably phasing out the traditional printers, threatening the livelihoods of millions of people. The treadle press is slower. Also its 'Platen & Bed' based letterpress mechanism is simply unable to match the sharpness, clarity, colour resolution, speed, ease, uniformity and flexibility of offset printers.

It is easy to imagine the desperation of the traditional printers who have seen their trusted machines grind to a halt. It is also easy to imagine their deadening realisation, that they could never afford the shiny, smart, new generation of printers.

"Having grown up with a press in his home, Satish knew his machine and its working inside out," says Professor Anil K Gupta of the Indian Institute of Management (IIM), Ahmedabad. He heads the government-funded National Innovation Foundation (NIF), which supports and encourages grassroots innovators like Satish, and even helps them find markets and collaborators.

When he had time from working with his father, Satish set about trying to find ways to upgrade the treadle press which was their bread and butter. Satish went about painstakingly, experimenting, reworking, retrying to redesign the old press into a worthier printer. Satish knew that treadle presses had their limitations. They could not print on plastic or board, and had problems delivering uniformly printed industrial labels and envelopes. Industrial printing is the bulk of the market. In 1998, he finally devised a kit to upgrade the treadle press, and the Motek Printing Press was born—an inexpensive upgradation tool for old letter press printing machines. He set about standardising the kit and incubated his product for another year.

His lack of knowledge, training or experience did not deter him as he went about painstakingly developing the printing press. In 1997, he tested the product, trying out impressions on paper, board and plastic.

Next year, Satish applied for a patent. His first patent (No. 189882) was granted on March 10, 1999 and he now has five patents for various versions of his machine.

The innovation successfully marries the technologies of screen printing with letter press machines. The cost of the Motek India Treadle press kit is about INR 25,000 (US\$ 550), against INR 125,000 (a little more than US\$ 2750), for a new offset press. Satish's kit increases the efficiency of the treadle press at least five times, and makes the press versatile. The retrofitting increases the output of conventional press from 12,000 sheets per day to 70,000 sheets. Baby-offset printers can print about 5,000-10,000 impressions a day. Also, Satish's Motek press uses butterpaper as its image carrying medium. Butter paper costs only INR 1.50 (a few cents) per sheet. By contrast, the baby offset printing presses use 'polymaster' sheets that cost INR 15 (a little more than a quarter) per sheet, according to the NIF website www.nif.org.in.

In Satish's conversion kit, the innovation lies in the unique technique of registering computer printed images using an exposure unit onto a screen unit. Printing material is pressed by an inked custom-built polymer sheet holder, fitted into the existing treadle press. It enables printing on various media by impact action.

The conversion kit is user-friendly, low on maintenance, and can easily convert any working treadle-printing machine to deliver printing results comparable to desktop publishing. Mono or multicolour half tone output can be achieved using existing treadle press inks. The kit is comfortable with all sizes of paper and plastic sheets. It can be operated with a pedal as well as by motor.

The road to the innovation has not been easy. The process of development

and the filing for patents proved very costly for Satish and he invested almost all of his father's savings. Later, he took a bank loan also, which the family is still repaying, says the NIF website.

Professor Gupta says: "What is even more remarkable is that it can be manned by a single person and can easily shift to using the letterpress technology if the need arises. The technology of this kit has been approved and certified by The Northern Regional Institute of Printing Technology, Allahabad (U.P.), which is India's first and premier printing technology institute."

According to the NIF website, Satish won a National award at NIF's Fourth National Competition for Grassroots Innovation and Traditional Knowledge in 2007. NIF has also supported him under the Micro Venture Innovation Fund. A major achievement for someone

who had to abandon his studies, to save his family's business. He is now busy organising funds to expand production capacity, to meet the steadily rising demand for his conversion kit.

NIF's technology expansion arm Grassroots Innovations Augmentation Network (GIAN) is helping scale up Satish's innovation. GIAN's north east cell has facilitated a distribution license for the Motek kit in Assam. Satish is also working on the possibility of a fully automated press while he gets his papers

ready to file for additional patents.

Now, Satish shares his experience with fellow innovators. In 2006, he addressed managers, students, teachers and innovators at IIM, Ahmedabad at an NIF-organised workshop on innovation.

Satish Deb has proved that the arrival of digital technology isn't always the death of the old ways; that we needn't throw away what we have, just because something better looking and more convenient has arrived on the scene. ■



US \$ 550

COST OF SATISH'S
TREADLE PRESS

CONVERSION KIT,
AGAINST US\$ 2750,

FOR A NEW OFFSET
PRINTING PRESS

ARTS & CULTURE



◀ **Sharp Focus:** Masks at a recent exhibition on the IGNCALawns. Artisans work and display their art at the exhibition (*Below*)

Nurturing Art, Naturally

Preserving art is built into the very design of The Indira Gandhi National Centre for the Arts. BY RUCHIRA MITTAL.

An art lover may not know where to begin looking for the history, methods and samples of an art form as beautiful and as obscure as, say, the Patta Chitra. To do that, one would either have to go to Orissa, the place of its origin, hoping to find informed locals, or simply rely on the loose information online. In fact, hundreds of such fine Indian art forms have been kept alive in closed societies or communities, and passed on from generation to generation. The more time passes, the more forgotten many such practices and art forms might become. However, researching, identifying, cataloguing, promoting and showcasing the arts of India is not a minor exercise. It needs an organisation that only the government can support and sustain.



Therefore, in 1987, the Ministry of Culture set up The Indira Gandhi National Centre for the Arts (IGNCA), in New Delhi. It works like a modern day custodian of the arts of India, an ideal place for gaining insights into Indian art forms.

Its range of operations reflects the dimensions of its mandate, covering each aspect of the arts, from archaeology to anthropology to the visual and performing arts.

The IGNCALawns has five departments, symbolised by lofty trees planted on its campus. The spinal pillar, its administrative section, is named the Sutradhara, represented by the

▶ Etched in Stone

IGNCA has launched an ambitious nation wide ethno-archaeological project to study ancient Indian rock

art at hundreds of sites in jungles, caves and dolmens across 14 states. A huge team of artists, geographers, geologists, art historians,

anthropologists and folklorists is painstakingly documenting, preserving and studying such art, some of it older than

1000 BC. The project has already been completed in Orissa and Jharkhand. Tamil Nadu has the maximum sites to explore.



Bodhi tree, and symbolising enlightenment.

The second principle, Janapada Sampada is represented by the multi-branched Nyagrodha tree (*Ficus Bengalensis*). It studies the various lifestyles and cultures which make up India, much like the branches and roots of the tree representing it.

The third principle, Kala Nidhi, is depicted by the ancient Asoka tree (*Saraca Indica*). Meaning fertile and free from grief, Asoka reflects in the multipronged library resource, housing books, films, audio material and more.

IGNCA's fourth principle, Kala Kosha is represented by the Arjuna tree (*Terminalia*), showing clarity of intent, firm direction, integrity and incisive thought. It sources, studies and publishes hundreds of texts from across India.

Finally, the fifth principle, Kala Darsana is depicted by the Kadamba tree (*Anthocephallus Camba*), conveying creativity and the joy it brings. It regularly organises exhibitions and art performances.

The IGNCA also has Kalasampada, the largest and one of the most comprehensive digital content repositories. Whether you are a scholar or enthusiast, view hundreds of thousands of manuscripts, slides, rare books, rare photographs, audio and video along with highly researched publications- all on a computer screen.

IGNCA has been appreciated the world over; most people like Stella Kramrisch, Curator Emeri-

Working on art:

Artists add finishing touches to an elaborate mythological painting at a recent exhibition on Mahabharata at the centre (left). Pages from the original Atharvaveda in the IGNCA archives (top). Rajasthani folk artists break into an electric song at a public symposium, on the IGNCA lawns in New Delhi, recently.



tus of Indian Art at the Philadelphia Museum of Art, gush with wonder and praise. Stella says she is "Overwhelmed by the stupendous vision and organisation of IGNCA... I think this is the moment when a new vision of creativity has been born... you have done for Indians the unbelievable service that each civilisation is in need of: to make this entire world a cosmos of the inner life and mind... All previous attempts of scholars in their respective fields appear as a groping only towards the clarity which you have achieved throughout."

So whether you want to study the patta chitra or architecture, sculpture, painting, graphics, music, dance or theatre, IGNCA is the place to visit. ■

TOURISM UPDATE



▲ **King of the waters:** In Sakhya Sagar lake's protected habitat, crocodiles can grow to a length of 12 feet.

◀ **Lake Tranquil:** The Sakhya Sagar lake was built on the Maniyer river in 1918.

▼ **Sunset to Starlight:** Sit on a bench on the sailing club's sunning deck and watch night descend upon the lakes's waters.

Under the Milky Way

Still your mind and charge your spirit at the Madhav National Park. BY RUCHIRA MITTAL

When the humdrum of life becomes cacophonous, it is time to head to the Madhav National Park in Shivpuri, Gwalior, Madhya Pradesh. Here, listen to the sounds of silence in a retreat ideal for both nature lovers and those seeking to reconnect with their souls. The rich, lush forest reserve will transport you to another world.

It is with a feeling of wonder that visitors soak in the natural wealth of the reserve and its erstwhile grandeur reflected in the architectural wonders that dot the park. In pre-independence India, Shivpuri was the summer capital of the Scindia rulers of Gwalior.



Situated on the gentle slopes of the upper Vindhyan hills, the park is spread over 355 square kilometres. The terrain definitely sets the mood — of unhurried ease, in the lap of mother nature. Nearly 115 km south west of Gwalior, which is also the nearest airport, the park is almost 430 km south of Delhi.

To city-concrete weary eyes, the Sakhya and Madhav Sagar lakes present nature in all its glory. Deep and calm, their waters provide just the right aquatic wetland for migratory birds

and predators. The Scindias had established a sailing club on Sakhya Sagar. One can get lulled by the tranquillity of the lake, but only until a loud splash nearby shows a misleadingly languid crocodile turning in the waters. The dangerous, predatory amphibian rules the lake and crocodile spotting can become an addictive way to spend time there.

The sailing club is built half on land and half supported on pillars that rise from the lake bed, and it makes staying there a rare treat. From its large sunning deck, the view of the Sakhya Sagar is unrestricted. The green of the forest and the blue of the waters come from God's marvellous colour palette.

When night falls, a surreal hush descends. Sit on a bench; be prepared to have your breath taken away as you gaze at the crystal clear night sky in its stunning view of the Milky Way. You will alternate between disbelief at the majesty of the skies and a deep spiritual dawning within you.

Once you have rested your body and soul, it is time to begin your day early, with a jungle safari. The forests of the Madhav National Park are dense with Khair (acacia catechu), Salai, Kerdhai, Dhawda, Tendu, and Palash trees.

Fairy tale trails lead through the forest — delicate pathways, butterflies, curious squirrels and an occasional langur simply delight. Gurgling streams, with their waters gliding over smooth flat rocks, lit by dappled sunlight filtering through the green cover, make time stop. The city and its life easily recede in the far distance.

But there is more to see. One can safely say that deer sighting takes on an entirely new meaning here. I was vastly amused by the curious, beautiful and delicate Blackbucks. The animals are largely fearless and used to humans. So, it is an experience to spot large-eyed and graceful deer lounging in a shady glade, casting a disdainful eye at any disturbance caused to their get-together!

The forest guards are zealous in guarding the flora and fauna of the forest. If you do step off your vehicle, be ready to be accosted by a majestic King Cobra with its hood spread out most threateningly. The forest guide will immediately warn you to be careful as the snakes move in pairs. The important lesson is to treat the animals' habitat with respect.

Other species at the park are nilgai, sambar, four-horned antelope, sloth bear, leopard and the common langur.

FIVE KEY HIGHLIGHTS

1. BEAUTIFUL BLACK BUCK



Even though startled, an irrepressibly curious buck stops and stares.

2. HUES OF DEPTH



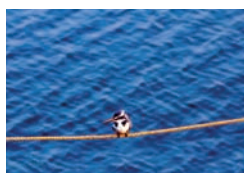
From atop the golf tower, undulating tree covered hills, the water and the sky, all drenched in hues of a mysteriously deepening blue.

3. JUNGLE CROSSING



Young wild boars casually cross a dirt road on their way to the lakeside on a lazy winter afternoon.

4. ROYAL PERCH



This nattily dressed master angler shows ownership of all it surveys.

5. LIGHT AND GLADE



Tree-lined gravel paths lead into the thick of the forest.



Deceptively Gentle: Home to the reclusive tiger, the dense national park hides a treasure trove of flora and fauna.

Just when you are sighing over little Chinkaras and gaily coloured birds, watch out for giant lizards and snakes, you could be struck by an entirely different emotion.

The various watch towers and colonnaded platforms (baradaris) will leave you feeling just a little jealous over the sway the maharajas had over this wealth of nature. The predominant realisation is one of how vital it is to preserve this gift of nature.

One is also struck at the number of tigers that were shot down in sport by the kings and their exalted visitors. A mile into the jungle, the grand George castle was built in 1911 for an overnight tiger shooting expedition for King George V. The king never visited the castle; he shot a tiger en route, and turned back.

A clock tower and a Golf tower are also close to the Sakhya Sagar. The Golf tower provides for a stunning tree-top view of the forest.

Then there is 40-foot high shooting box on Sakhya Sagar. The kings viewed wildlife from the box, especially at night. The forest is marked by what were the landing sites for royal aircraft. Drive past them and allow yourself to be lulled into an unbelievable time warp.

The park is open all year around from sunrise to sunset. But October to March are best for spotting wild life. If you are an avid bird watcher, visit in winter to gloat over migratory waterfowls in the Sakhya Sagar lake.

The sounds of silence here are like the primordial 'aum'. Here, they borrow notes from the chirping of birds, the splash of the fish, the buzzing of the dragonflies and the chattering of the grasshoppers. No visitor can be left untouched and certainly all vow to return. Such is the magic of the Madhav National Park. ■

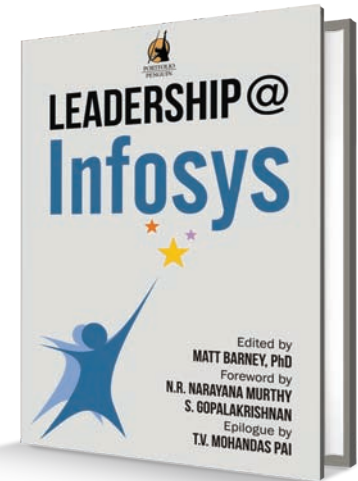
“The book codifies
Infosys' unique
values and leadership
practices.”



Author: Matt Barney

New Paradigm in Leadership Thinking

Infosys, an enterprise that has led India's march to the top of the global software pyramid, gives insights into developing effective leaders for the 21st century. **BY MAHESH RAVI**



INFOSYS Technologies Ltd has been heralded as one of corporate India's leading lights. It typifies every aspiring entrepreneur's dream, as the success story of seven driven men from India's middle class, with only a dream to bind their aspirations. Their early struggle inspires many in India and the world. In a business landscape that was traditionally dominated by family-owned enterprises, the success of “self-made” entrepreneurs of Infosys emerged as a new beacon for Indian business.

Infosys has become a seamless part of the Indian psyche, and there are numerous articles and reports that have chronicled its success. But *Leadership @ Infosys* is perhaps the first book to systematically analyse the key factors that have helped the company grow rapidly, from a seed capital of just US\$ 200, in 1981, to crossing the four billion-dollar mark in 2008. The book is an interesting anthology of articles from senior leaders of Infosys and edited by

Matt Barney, PhD, Vice President and Director of the Infosys Leadership Institute (ILI), in Mysore, near Bengaluru, Karnataka. The institute serves as the company's corporate training facility.

The foreword, written jointly by N.R. Narayana Murthy, Chairman and Chief Mentor and Kris Gopalakrishnan, CEO, sets the tone for the rest of the book with its refreshing candour. The writers acknowledge the transformation that Infosys has undergone and with characteristic modesty, admit to “not being perfect”.

The vision is grand, as they express their desire to see Infosys thrive for the next 200 years; a grand ambition, no doubt.

They identify Infosys' values as the key driver to sustainability. And they point to how Infosys always strove for ‘respect’ – their vision exhorted them to become a ‘globally respected corporation.’ They also believe that the leadership should set a positive example for the rest of the organisation, as that would provide the “moral authority to lead.”

ABOUT THE AUTHOR

Matt Barney is Director of the reputed Infosys Leadership Institute. He selects and develops Infosys' senior and high-potential leaders.

Inspiring words, indeed. And Infosys has certainly lived up to its lofty ideals over the last three decades.

Matt Barney's introductory chapter takes the reader by the hand and leads him into the inner sanctum of the Infosys edifice. Here, he sets out the core Infosys values as C-LIFE—Customer delight, Leadership by example, Integrity and transparency, Fairness and the pursuit of Excellence. Then he explains how Infosys selects, trains and nurtures its leaders. The ILI assigns counsellors to the cadre of leaders who have been identified for senior positions. These counsellors serve as coaches who, according to Barney, “help the leader interpret strengths and opportunities, and focus specific actions that will likely pay off the next year when we assess them.” In addition to C-LIFE, Barney outlines the nine dimensions of “Infosys Leadership”. He combines the interrelated Strategic, Change, Adversity and Transition dimensions into one chapter.

The other dimensions are: Operational, Talent, Relationship and Networking, Content and finally, Entrepreneurial. Each chapter in the book focusses on one of these dimensions and select Infosys leaders, identified by ILI, share their insights and experiences within that particular dimension. As one leafs through the pages, the eye-opening insights make for fascinating reading.

Sreekumar T.S., Principal, Leadership Development with ILI, outlines a comprehensive overview of Infosys' journey and its strategic decisions at various points of time. He lists a series of "firsts" that Infosys achieved, including setting up the first 64 kbps international private line for any enterprise in India in December 1992 between its Boston and Bengaluru offices. It was one of the first in India to offer stock options to its employees and also set new milestones in transparency and corporate governance.

In the chapter on Change Leadership, the authors outline three types of change that were important in the Infosys context. These were generic change leadership, adversity leadership and transition leadership. The authors acknowledge that the "passion and energy" to drive change have to come from within the leader who has to drive change. One of them, Manoj Narayan, Senior Engagement Manager, Solutions & Consulting Group, outlines the four questions he examines before beginning any change initiative: 1) Am I, as a person convinced about the need to change? 2) Do I understand why and what needs to change? 3) How are we to create meaningful change and 4) How will I

"Leadership is about getting ordinary people to achieve extraordinary goals... an exceptionally difficult task."

T V Mohandas Pai, Director & Member of Infosys' Board

make it work? According to him, answering these questions, helps us understand if we have the passion required to drive change. Its former CEO Nandan Nilekani's idea of a "flat world" inspired New York Times journalist Thomas Friedman to write a hugely successful book—"The World Is Flat".

The chapter on Entrepreneurial Leadership underscores the importance of nurturing entrepreneurship within a firm, even as it may grow larger and more process-oriented. Its author, Gaurav Rastogi, speaks of the company's business context of seeking high growth in the face of strong global competition. That context "dictates that we pay attention to the face of leadership that is involved in building new growth engines and in incubating new ideas," says Rastogi. He says "Infosys deliberately cultivates leaders who tire easily of the status quo, and who are expected to challenge conventional wisdom and question the accepted logic of the prevailing business model and respective products and services." In this context, he cites the example of Subhash Dhar, the current Global Head of Sales, Marketing and Alliances and the Unit Head of the Communication, Media and Entertainment vertical. As Head of Sales for the Communica-

BOOK EXCERPTS

"... in moving from a mere vendor or supplier to a consultant and, even better, to a concerned friend and trusted advisor, leaders can change the very nature of the way business is done with customers."

"Do I understand what job tasks and good 'citizenship' behaviours I need in order for my team, process or firm to successfully realise its strategic objectives?"

tions and Products Services (CAPS) business, Subhash was facing problems as sales were falling continuously every quarter. He was convinced that the strategy had to change, and Infosys needed to move from telecom hardware suppliers to telecom service companies. It took six quarters for the strategy to succeed, but he persevered. These, and other nuggets of wisdom interspersed in the book, provide a new source of knowledge for aspiring leaders across the spectrum.

The epilogue from T.V. Mohandas Pai, Director and Member of the Board, is no less inspirational. Pai says "leadership is about getting ordinary people to achieve extraordinary goals," something which he acknowledges is an "exceptionally difficult task." But he concludes that it is only a "team of excellent, passionate, visionary leaders with a wide range of viewpoints" that can provide long-term sustainable leadership. Leadership@Infosys is an insightful account of the leadership paradigm developed by one of India's leading technology companies. It serves as a useful guide to those who wish to take their own enterprises to new heights of excellence. It is indeed heartening to see leadership and management lessons emerge from India Inc., that can be applied at the global level. ■

RURAL UPDATE

Bright and warm:
IIT graduate lights up rural homes
with cheap solar power and a smart
service plan. BY HEMANT KUMAR



Even though there are deep reservoirs of fossil fuel on this planet and explorers keep announcing new finds every other day, the resources are fast vanishing.

The overview would be bleak but for entrepreneurs like Dr Harish Hande, an IIT Kharagpur graduate. While studying energy engineering at the University of Massachusetts, USA, he realised that solar power could work in India. But most of the customers were poor, and they needed not just the systems, but also the money to buy them, and easy after sales service. To do just that, he set up SELCO Solar Pvt Ltd in Bengaluru, Karnataka, in 1995.

First, Dr Hande and his team set out to win the trust of the villagers, most of whom could not afford to pay for solar power.

Also, solar power was not thought to be economically via-

ble. But in 1996, SELCO received a loan of US\$ 150,000 from Winrock International, through the USAID Renewable Energy Commercialisation Project. But the condition was that SELCO would install a minimum number of systems and service centres. The company paid back the loan in four years.

It has so far sold, serviced and financed solar systems in more than 120,000 rural and semi-urban homes. Its customers range from daily-wage workers to schools and seminaries.

A typical solar power unit costs US\$ 450 and it generates 40 watts of electricity, enough to light several seven-watt bulbs for four hours. Charging the cells is easy in a nation blessed with abundant sunlight.

The customer pays one-fourth of the cost as down payment and the rest in monthly instalments.

SELCO has also worked hard



An IIT Kharagpur graduate, Harish Hande earned his Doctorate in energy engineering at the University of Massachusetts, Lowell, USA.

to convince banks to grant loans to needy customers. Rose pickers in a village near Bengaluru, who stepped out each day before dawn with a lamp in one hand, picking roses with the other, were able to double their productivity and incomes with SELCO's solar powered head lamps.

Now, enterprising villagers are using SELCO's solar panels to charge a bank of small batteries that they rent out to street vendors at a nominal price.

In 2007, SELCO won the Outstanding Achievement prize of the prestigious Ashden International Awards of the UK. Hande used the substantial prize money to increase sales and establish an innovation unit. The award citation said Hande "has demonstrated beyond doubt that it is possible to run a renewable energy business which is both a striking commercial success, and lifts people out of poverty". ■