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INDIA CHEMICALS 2019



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PCPIRs - Distribution - Logistics*



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Dear Reader,



Welcome to GBR's 2019 Industry Exploration guide to the Indian Chemical industry.

In an increasingly uncertain global environment, where trade wars, low oil prices and new regulations in China are upsetting business, India offers a rare degree of predictability. Its fundamentals alone, including rapid population growth and the expansion of a huge urban middle class, ensure consistent growth for the chemical industry, while the current unruly gusts that are buffeting international trade add further opportunity for India

This is truly an exciting time for India. With its chemicals market currently valued at US\$160 billion, with US\$32 billion in specialty chemicals, the industry is projected to grow to US\$300 billion by 2025. With domestic and international demand increasing, especially in agrochemicals, surfactants, colourants and paints and coatings, India's chemical industry has seen double-digit growth from 2013 to 2017, and, through our research, we have explored the trends and business practices that have enabled this growth.

India's domestic market has been radically simplified by the introduction of the new Goods and Service Tax (GST), which came into effect in June 2017, and has effectively unified the country into a single market, replacing a plethora of variable state and federal taxes. This has greatly facilitated trade and reduced the cost of doing business, while Prime Minister Modi's 'Make in India' campaign offers encouragement for investments into manufacturing. The government has approved four Petroleum, Chemical and Petrochemical Investment Regions (PCPIRs) across the country that are intended to emerge as hubs improving efficiencies and collaboration with the aim of competing with recognized global hubs, such as Jurong Island in Singapore. Nevertheless, the principle hindrance that India's chemical industry must tackle is a lack of feedstock, with most hydrocarbons imported from the Gulf. Partly because of this, the new hubs are struggling to find an anchor tenant to provide a reliable flow of feedstock that is essential to their development.

But as China's chemical industry is experiencing disruptions due to factory closures as new environmental regulations are applied and a potential trade war with the USA looms, businesses are increasingly looking to India as an alternative supplier. India's chemical industry is currently awash with opportunities; at every point across the industry's supply chain and across all segments there are opportunities to create value.

The following pages contain GBR's analysis of the state of the Indian chemical industry based on three months research across the main hubs of India's chemical sector. During our stay in the country, we were able to gain insights from interviews with the industry's principle protagonists and a number of these interviews have been included along side our analysis.

A special thank you to our association partners, the Indian Chemical Council (ICC) and the Indian Specialty Chemical Manufacturers Association (ISCMA) for extending their support, and the range of C-Level executives that have shared their wealth of insights with us through the research process. We hope you enjoy the read as you learn about India's growing potential to becoming a regional chemicals powerhouse.



Alice Pascoletti
General Manager
Global Business Reports

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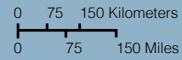
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- States and Union Territories
- ★ Capital City
- State or Union Territory Capital



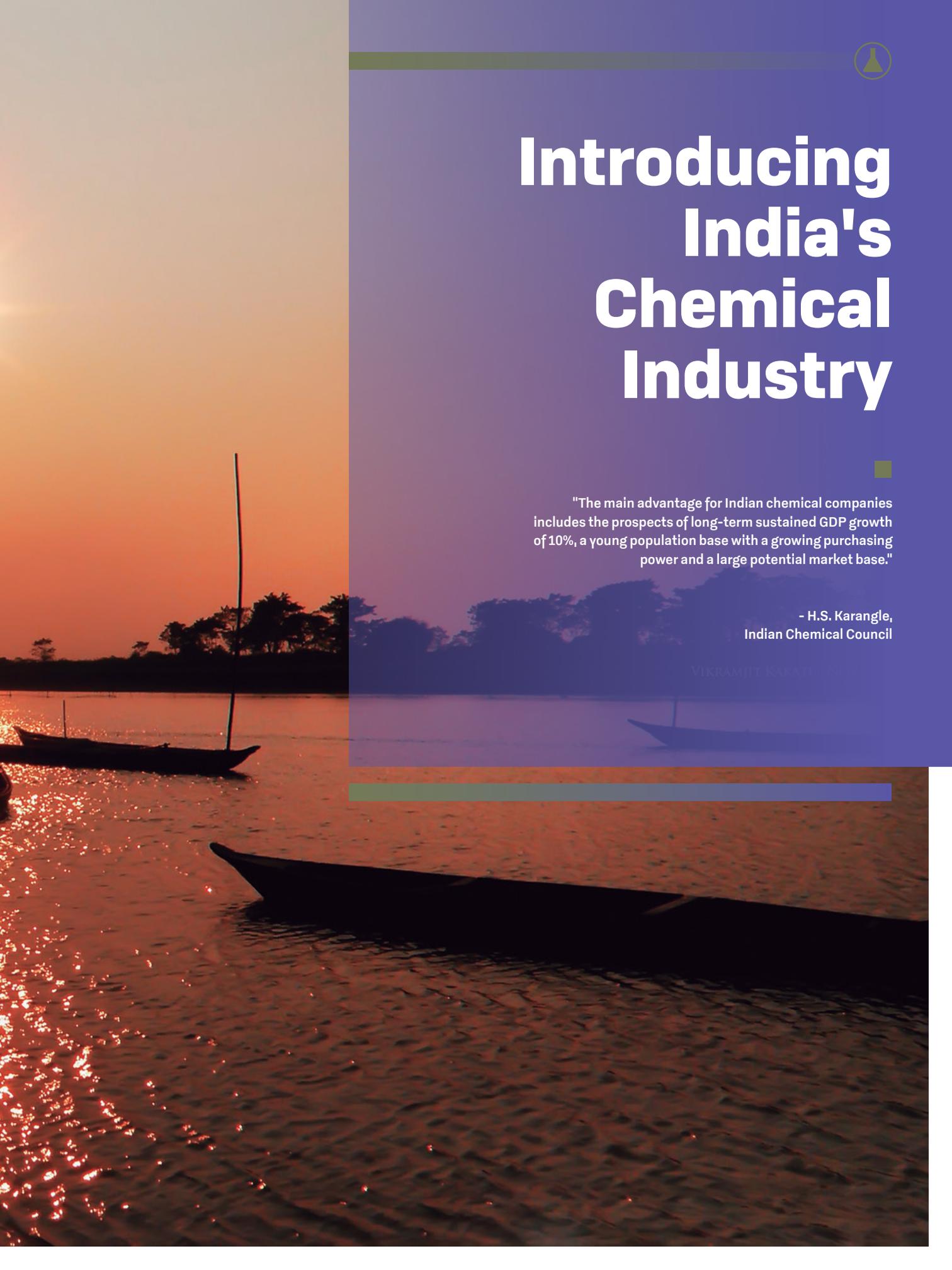


Introducing India's Chemical Industry

"The main advantage for Indian chemical companies includes the prospects of long-term sustained GDP growth of 10%, a young population base with a growing purchasing power and a large potential market base."

- H.S. Karangle,
Indian Chemical Council

VIKRAMJI KARANTH



India: A Sleeping Giant Awakens

Expectation increases as development gathers pace

India has long been a country of potential. Promises of rapid development and prosperity have often been made, yet their delivery has taken time. But in recent years, India has become one of the fastest growing markets in the world, adding US\$1 trillion to its GDP in the past five years, four times quicker than the previous US\$1 trillion. Now, with its ever-growing market base and its talented workforce, the country is stepping up its case of becoming a global manufacturing hub driven by the 'Make in India' campaign. Economically, India's annual GDP growth rate has remained at over 5.5% for the past 10 years and 7.3% growth is expected in the current fiscal year (2018-2019), according to the World Bank. At the this rate, India is outpacing China as the world's fastest rising major economy.

India's chemicals industry is also witnessing sizeable growth. Between 2010 and 2015, it posted a strong compound annual growth rate (CAGR) of 13% according to JM Financial Institutional Securities, reaching US\$160 billion by 2017. It is expected to dramatically increase to US\$403 billion by 2025 according to the IBEF. But what is contributing to the sector's increased fortunes?

Rising domestic demand meets a global supply shortage

The Indian chemical industry's rapid growth, which is forecasted to have a CAGR of 8% to 10% to 2025, is being driven by both domestic and international factors. Increasing development is leading to an insatiable demand in a number of end-user markets, including personal care, agrochemicals, food, feed and paints and coating, which is resulting in higher consumption of chemicals per capita. A growing middle class and increasing urbanization are specifically contributing to this. According to the National Council of Applied Research, the Indian middle class could grow from 31 million households in 2008 to 148 million households by 2030, quadrupling consumption power. Moreover, India's urban population is expected to increase by 275 million by 2030. "The biggest advantage is the domestic market," remarked Anshuman Maheshwary, partner at A.T. Kearney, when discussing the main advantages of entering the Indian market right now. "There is

growth in all sectors and companies are investing in India for the end market access. That is the single biggest pull factor. Also, there has been a lot of evolution within these markets. Earlier, the belief was that India was a 100% price-dominated market. It has been increasingly proven that it is not just price and there are other factors like efficiency and performance that play to the advantage of multinationals. From an intent standpoint, there is a lot of government support and more stability in the Indian market as compared to China." 11>>

The government is pragmatic and keen on promoting sustainable growth based on risk based assessment instead of hazard based approach. Regulatory standards are becoming more relevant in the chemical industry and the government is open to listening to suggestions. Manufacturers and associations are recommending for self-regulated operations as opposed to mandated regulations.

**- Sanjay Trivedi,
Chairman,
Trivedi Groupe**



INDUSTRY AT A GLANCE

Sources: World Bank Group, International Monetary Fund, Government of India, India Rating, PwC



7.3%

GDP GROWTH

2018-2019 fiscal year



7.21%

SHARE

of total manufacturing sector



1.36 billion

POPULATION



10%

GROWTH RATE

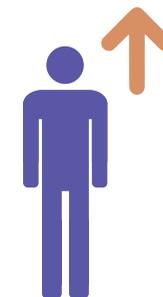
of specialty chemicals in India annually till 2025



1.2%

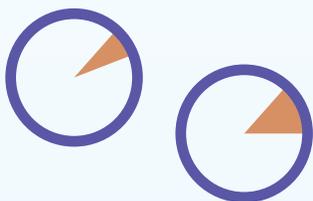
SHARE

chemicals sector represents 1.2% of National Gross Value Added



1.1%

GROWTH RATE PER ANNUM



Chemicals Industry accounts for **7%**

of the Indian GDP and about

14% in overall index of industrial production (IIP)



3rd

largest consumer of oil globally



2nd

largest consumer of coal globally



H. S. Karangle

Director General
INDIAN CHEMICAL COUNCIL

The Indian Chemical Council (ICC), established in 1938, is dedicated to the growth and promotion of the chemical industry in India. Could you further introduce us to the ICC?

The Indian Chemical Council (ICC) is the apex national body representing all branches of the chemical industry in India such as organic and inorganic chemicals, plastics and petrochemicals and petroleum refineries, dyestuffs and dye-intermediates, fertilizers and pesticides, specialty chemicals, paints etc. The ICC is dedicated to the growth of the Indian chemical industry, and over the years it has expanded its functions and offerings to cater to the varying needs of the sector.

How has India's chemicals industry evolved over the past decade?

The Indian chemical industry has seen spectacular growth over the last decade. The growth is likely to continue for many more years, and it is projected to reach US\$402 billion by 2025. The reasons for this include the growth of the economy (an annual GDP growth rate of 8%), a large and young population, massive infrastructure investment, a rise in the middle-income group, thriving retail outlets, modernization of the agriculture sector and a low per capita chemical consumption base. As a result, in the past decade, there has been robust growth in refining, petrochemicals, paints, agrochemicals, pharmaceuticals and specialty chemicals.

India's specialty chemical industry is now at US\$32 billion. Are you seeing a move away from the production of base chemicals towards the production of higher value-added derivatives?

The demand for base chemicals in India is still very large. In fact, a large deficit in base chemicals and building blocks exists, which presents an opportunity for investors. For example, methanol acetic acid, VAM PvOH styrene monomer acrylates, and SAP phenol represent areas where large imports are taking place. Specialty chemicals demand is growing at a fast pace and the sector requires investment, technology, local application development and R&D. The opportunity in this segment is tremendous and India, with its strong respect for intellectual property rights (IPR), is well suited for hi-tech chemical to invest and enjoy long-term sustainable growth.

How is the 'Make in India' initiative impacting local chemical manufacturers?

'Make in India' is a massive government initiative to attract investment and technology from global industry leaders. With a population of more than 1 billion that has increasing purchasing power, local manufacturing is an attractive proposition. China, the United States, France, Japan and the UAE are part of 'Make in India' programme. Companies like Boeing, MV Agusta, GE, General Motors and Cummins have already committed resources. Moreover, many hi-tech companies have set up their R&D facilities in India, as there is a large pool of highly skilled technical manpower.

How has the new single Goods and Services Tax (GST) impacted India's chemical manufacturers?

A single GST tax has improved the ease of doing business tremendously. For the manufacturers, input credit has become easy and the system is more aligned to global GST models. The government has been proactive in its effort to ease the systems to facilitate business, and over the next few years the GST methodology and practices are expected to become completely in line with global standards.

What are your expectations for India's chemical industry over the coming three to five years, and can you share a final message to the investment community?

The industry leaders in the chemicals sector expect uninterrupted growth in the coming three to five years riding on domestic market growth. The global turbulence, due to oil price movement and possible trade flow changes as a result of protectionist regimes across the world, may not impact India as adversely due to its inherently large domestic market strength and stable political regime via a vibrant democracy. The growth of the chemicals industry in India will continue in double digits for many more years. The performance of the chemical sector in the stock market has been excellent in the past five years, outperforming most sectors. This is likely to continue, and a final message to readers and the investors would be – participate in the growth of India, invest in the chemical sector and deliver your shareholder robust returns for many years. ■

Vinay Patil

President

INDIAN SPECIALTY CHEMICAL MANUFACTURERS ASSOCIATION



Could you provide a brief introduction to the Indian Specialty Chemical Manufacturers Association (ISCMA) and a history of the organization?

The Indian Specialty Chemical Manufacturers Association (ISCMA) is one of the oldest chemicals organizations in India with a history spanning more than 55 years. At our centralized office in Mumbai, we oversee manufacturers of functional chemicals and specialty chemicals. We try to understand and meet the changing demands of consumers, as well as looking at ways to improve value in terms of properties. Additionally, we try to give exposure to our members, especially small manufacturers in India and help them to develop export opportunities.

India's specialty chemicals industry is now at US\$160 billion and is expected to double by 2025. How do you see the industry evolving?

India is becoming one of the most important regions globally in terms of specialty chemicals. There has been a significant rise in the production of functional chemicals, especially for corrosion prevention and electroplating.

There is a clear move towards low-volume, high-value productions, and companies are also demonstrating better awareness of their customers' needs and subsequently finding innovative solutions to address them.

India has historically had a low-consumption rate of chemicals per capita, but we are seeing this steadily increase. Companies are trying to meet the large domestic market's demand and catering to this as a first priority. Additionally, our members are exporting to neighbors such as Bangladesh and further afield in APAC. We are also seeing companies from Europe and the United States eagerly coming to India to collaborate and increase investment in the market.

Are there any untapped opportunities in India's specialty chemicals industry?

We are increasingly looking to work in some of the untouched areas, like corrosion electroplating and biofuel. With respect to the latter, we would like to create different sources of biofuel, not only from starch. The country has many crops that go to waste, which are usually burnt and create pollution. These paddies can be used for the preparation of biofuel, which will reduce our pollution problem. ■

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Narendra Modi's 'Make in India' initiative, combined with stringent environmental regulations put in place in China, have both led to increased opportunities for India's manufacturers. A temporarily weakened rupee is also contributing to rising export competitiveness - the Indian rupee went from 63.50:US\$1 at the beginning of 2018 to as much as 74:US\$1 by October 2018 - although its continued weakening in 2019 will not do any favors for Indian companies that rely on U.S. dollar debt to fund their operations and have dollar-based costs. Finally, trade tensions disrupting global dynamics are underlining India's credentials as an alternative partner to China. "The global turbulence, due to oil price movement and possible trade flow changes as a result of protectionist regimes across the world, may not impact India as adversely due to its inherently large domestic market strength and stable political regime via a vibrant democracy," said H. S. Karangle, director general of the Indian Chemical Council.

A helping hand from the government

With respect to governance, India is trying to strip bureaucratic complications which have for so long hindered cross-state development. The new Goods and Services Tax (GST), which came into effect in June 2017, has been a key stepping stone unifying the country into a single market as it has replaced numerous federal and state taxes. Since its implementation, India has jumped 30 places in the World Bank's Ease of Doing Business Index (2018), albeit still at 100th. Despite variables such

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The 'Make in India' Initiative

1 The 'Make in India' initiative was launched by Prime Minister Narendra Modi in September 2014 as a wider set of nation-building initiatives.

2 The government is building six industrial corridors to develop land and quality infrastructure

3 Since the initiative's launch, India's 'Ease of Doing Business' has jumped from 142nd (2014) to 100th (2018) in the World Bank's Doing Business ranking.

4 Since the initiative's launch, India's foreign direct investment (FDI) inflow has increased by 55% and FDI equity inflow by 63%.

Launched in September 2014, 'Make in India' is an international initiative by the India Government to

Facilitate investment **1**

Foster skill development **2**

Protect intellectual property **3**

Build best in class manufacturing infrastructure **4**



"'Make in India' for chemicals specifically has seen limited success till now. The intent is correct as a lot of chemicals are imported, but there are some fundamental issues that need to be resolved for the campaign to gain momentum. One of the most critical elements to get competitive manufacturing in India is feedstock security."

**-Anshuman Maheshwary,
Partner,
A.T Kearney**



"I believe that science needs to be left to the scientists and industry to the industrialists. The government should not be the driver of this change, rather a facilitator. The scientists and industrialists are smart enough to figure out what the right path is and should have the ability to do so by themselves, if the conditions are made more conducive."

**-Tejas Parekh,
Country Manager,
Connell Brothers**



"We are actively contemplating investing in some manufacturing capabilities within India and believe that India will be a future hub of manufacturing not only for our existing products but for some of the new R&D molecules that are in the pipeline. In order for us to invest in India, we need the support of the government."

**-Pramod Thota,
President,
FMC India**



'Make in India' began by examining the industry that has the biggest import bill. Currently, the electronics industry is in parallel to the petrochemicals import bill. Today, the government's primary concern is to reduce dependency on imports. They actively promoted the 'Make in India' concept and a great example is Samsung's factory established at Noida in north India, which is the world's largest mobile manufacturing plant. That was a result of the change in import duties as an outcome of the 'Make in India' initiative that promotes products being made in India versus directly importing.

**- Ajay Durrani,
Managing Director,
Covestro India**

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more fade-resistant

STADIUM SEATS



more effective

TABLETS



more sustainable

ANIMAL FEED



more weather-proof

MONUMENTS



more caring

SKIN CREAMS



insulated

REFRIGERATORS



more effective

DETERGENTS



<< 11

as 'Protecting Minority Investors' and 'Getting Electricity' being as high as 4th and 29th respectively, the country ranks as low as 164th for 'Enforcing Contracts' and 181st with respect to 'Dealing with Construction Permits'. Vinay Patil, president of the Indian Specialty Chemical Manufacturers Association, highlighted that the implementation of GST will improve the working capabilities of India's manufacturers as it reduces the number of indirect taxes as well as the cost of doing business. According to M. P. Aggarwal, chairman of Sajjan India: "GST is a great idea which will greatly decrease costs, including initial investment. These initiatives will make India's manufacturing and cost base more dynamic."

Repeating challenges lie ahead

Although clear action has been taken by both industry and government alike, old and new cracks continue to deter India's long-term prospects as a regional chemical manufacturing powerhouse. A key hindrance remains the lack of feedstock options. The government had approved of four Petroleum, Chemical and Petrochemical Investment Regions (PCPIRs) in the states of Andhra Pradesh (Vishakhapatnam), Gujarat (Dahej), Odisha (Paradeep) and Tamil Nadu (Cuddalore and Naghapattinam), to improve efficiency and collaboration, but finding an anchor tenant to provide a reliable flow of feedstock continues to be the key flaw.

For now, the country can rely on its close geographical proximity to the Gulf for cheap feedstock. However, as feedstock prices will likely remain volatile moving forward and domestic demand continues to increase, building feedstock capabilities will be a question of when, not if. ■

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Anshuman Maheshwary

Partner
A.T. KEARNEY

How is the 'Make In India' initiative positively impacting India's chemical manufacturers?

'Make in India' for chemicals has seen limited success until now because there are some fundamental issues that need to be resolved for the campaign to gain momentum. One of the most critical elements to achieve competitive manufacturing in India is feedstock security. India has not been able to provide that feedstock domestically to a wide range of companies. The large companies, including those in the public sector, are satisfied with the state of evolution in India using those C2, C3, and C4 chains to make commodity products.

The government has conceptualized the Petroleum, Chemicals and Petrochemicals Investment Regions (PCPIRs). In Singapore, it has happened in a very structured manner with the entire ecosystem coming into play at Jurong Island. In India, the intent is there, but the execution is missing. Therefore, the campaign has been only marginally successful. There is now renewed focus from the government, and we have been working with them and industry bodies on an execution-oriented agenda.

How long can India rely on importing core feedstocks?

India has a growing deficit in terms of some of the core feedstock streams. If we project till 2030, there is the potential for 20+ crackers in India. In contrast with the global scenario, there is overcapacity, utilization under threat and capacity additions happening in Southeast Asia, North America and the Middle East. Although India relies heavily on imported streams and value-added specialties, in reality the value-added cost is very significant, which would play out negatively on the current trade balance. Also at the core issue of energy security, there is a need to have more domestic share of this growing demand – directly through manufacturing in India and also using innovative levers such as reverse SEZs, etc.

A supply shortage in China, following implementation of stringent environmental regulations, has encouraged greater emphasis on India's chemical producers. Are you seeing an increase in demand for India's manufacturers?

Capacity increase takes time, but if you analyze the financials of Indian chemical companies, the last 18-24 months have been great

with strong financial returns. A key reason was the disruption in China, which allowed India to manufacture at higher utilization and realize higher prices. Investments have also returned in the past two years, and clients are trying to understand where to increase capacity, albeit with an element of cautiousness. Now, they need to match up and be cost competitive on a global scale. Importantly, they are looking at adding further capabilities versus merely increasing capacity – for example by enhancing their R&D focus. Companies are also looking to partly invest the recent surplus generated in global markets to de-risk their India portfolio.

How do you see the regulatory framework related to sustainability and safety evolving here in India?

Sustainability and safety are increasingly becoming the focus in India, as is true globally. Multinationals will not compromise on these issues, and large Indian companies are committed to upholding the stringent HSSE norms. However, there is a large block of mid-sized Indian companies which traditionally have done only the minimum required. This block is having to change; some of it is imposed, as the National Green Tribunal (NGT) comes down fairly hard in terms of shutting down some of the units. Apart from this block, there is also a very long tail of semi-organized manufacturers that include small mixing units to slightly more advanced processing units. These are severely under threat not just from an environmental sustainability standpoint, but also in terms of whether they can bear the additional cost of compliance and remain competitive.

Could you provide a final message on the prospects of the Indian market?

We are fairly bullish on the Indian market. The potential for growth is definitely there, and given the end-market size & growth, staying away from India is not going to be an option for most companies. Also, increased domestic manufacturing is very much on the cards. However, there are additional skillsets and capabilities that need to be acquired, such as how one goes to market ensures feedstock security, deploys digitally, ensures cost competitiveness and establishes a greater footprint rather than being dependent on a single specific market. These factors will define the winners, for whom awaits significant financial success. ■





Manufacturing

"There is opportunity everywhere today in India. You cannot throw a stone without hitting an opportunity. The question is - what are we capable of being able to monetize within our needs, our capabilities and availability. We have to prioritize; and our focus is to value-add and move up the value chain."

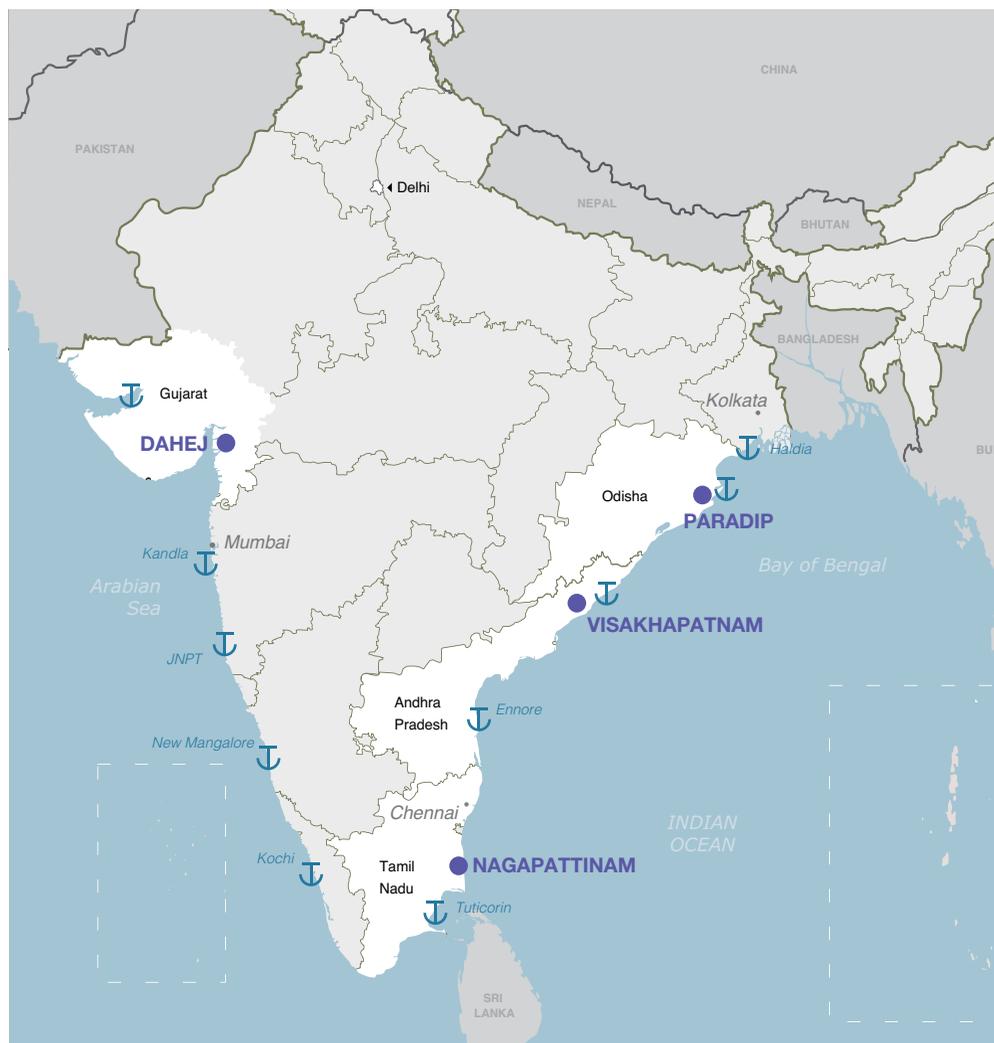
- Sudhir Shenoy,
Dow Chemical International (Dow India)

New Opportunities at Home and Abroad

India's chemicals industry is expected to have a CAGR of between 8% and 10% until 2025, due in part to the exponential increase in domestic chemical consumption. Strict new environmental regulations put in place by the Chinese government have also created further opportunities for India's producers as markets across APAC seek an alternative source of supply. Pramod Thota, president of FMC India, highlighted: "This is an opportunity for India to advertise itself as the next big destination for chemical manufacturing [...] Companies do not like the uncertainty that comes with political, regulatory and economic changes and that is what is happening in China, so for those looking at alternatives, India ranks high in such conversations right now. We are actively contemplating investing in some manufacturing capabilities within India and believe that India will be a future hub of manufacturing not only for our existing products but for some of the new R&D molecules that are in the pipeline. In order for us to invest in India, we need the support of the government."

Short and medium-term growth will be propped up by the aforementioned factors. However, the long-term future success of the industry centers around the longing need for a reliable stream of feedstock. "The shortage of feedstock and the volatile forex situation is creating anxiety in the market as customers want stable supplies at stable prices," underlined Harshad Naik, managing director for India at Huntsman.

PETROLEUM, CHEMICALS, PETROCHEMICALS INVESTMENT REGION CLUSTERS



“Materials that are available locally at a stable price will quickly become the leading product in the market. We need investment into the supply chain in order to make products locally available and in the next five to 10 years, the market demand will be for world scale production facilities within India.”

For now, the lack of feedstock can be partly met by the right import strategy. However, with India’s oil demand by 2040 expected to rise quicker than any other country according to the International Energy Agency, there is a growing need for this to be addressed in the coming decade. India’s Chemicals and Petrochemicals Secretary, P. Raghavendra Rao, underlined the importance of implementing an integrated policy towards this, highlighting that by 2025, the ethylene deficit is set to reach 7.5 million tonnes per year (mt/y); the equivalent of five new crackers. Feedstock gives birth to each value chain in the chemicals industry and without it, India’s dependence and lack of security will remain.

Collaboration Essential for Progression

Collaborative ecosystems have been the bedrock for many of the world’s leading chemicals manufacturing hubs. The Petroleum, Chemicals & Petrochemicals Investment Regions (PCPIRs) have been India’s response. Of the four PCPIRs declared by the Ministry of Chemicals and Fertilizers

in 2007, Dahej in Gujarat has shown most progression. Major Indian companies including ONGC, GACL and OPAL have opened facilities there, and so have multinationals including BASF and LANXESS. The ecosystem is also becoming a hotbed for smaller and medium sized Indian companies to expand into. Dai-Ichi Karkaria, for example, has invested in a new plant at Dahej. “We are currently focused on doubling capacity at our Dahej site with a new plant. The rationale behind this was to increase our footprint as part of the PCPIR,” said Shernaz Vakil, chairperson and managing director at Dai-Ichi Karkaria.

For what has become the flagship operation for India’s chemicals industry, inefficiencies continue to affect development at Dahej. For example, the anchor tenant at Dahej was meant to supply feedstock, but that has yet to happen. Despite this, Dahej has proven itself to be the most advanced of the PCPIRs. “Today Gujarat has taken the lead, specifically in Dahej, where we are working extensively on eight to 10 plants,” remarked S.S. Acharya, managing director at Mott MacDonald in India. “Dahej houses support infrastructure, including social infrastructure, rail linkages, ports and more, attracting investment from Japanese players in new technologies such as central monitoring and information systems. The rest of the PCPIRs possibly pose challenges as Maharashtra and Karnataka face land issues, and Andhra faces a split between two states, which will result in a delay in funding.” 23>>



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Dai ichi is one of the pioneering specialty chemical companies in India. The company commenced in 1963, in technical collaboration with Dai -Ichi Kogyo Seiyaku of Japan.

Dai Ichi has recently expanded manufacturing capabilities with a new plant in Dahej, in effect doubling its present capacity.



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Raman Ramachandran

Chairman and Managing Director
BASF INDIA

Could you introduce us to BASF and the verticals present in India?

BASF has 13 operating divisions globally that are categorized into five segments. The chemicals segment comprises of three operating divisions - the monomers, intermediates and petrochemicals; the performance products segment has four operating divisions including chemicals, performance chemicals, dispersions and pigments, and care chemicals and nutrition. The final three segments are functional materials in solutions, the agro business and the oil and gas segment. Only the latter is not presently active in South Asia.

In India, we have nine manufacturing sites, with our largest investment in India being our plant at Dahej. The site manufactures dispersions, personal care chemicals and caters to our performance materials division, which comprises of polyurethane for the automotive sectors, and the production of chemicals for care chemicals and polymer dispersions for the coatings and paper businesses. The Ankleshwar manufacturing plant is dedicated to optical brightening agents, imaging and colorant chemicals. The Thane manufacturing site is our oldest site in the country, producing products for the textile and leather industries and other chemicals and plastics. Established in 2017, our Chennai plant is the newest and has a dedicated catalyst division that produces mobile emission catalysts for the automobile sectors, which conform to BS4 and BS6 norms. The plant in Mangalore is manufacturing products for a wide range of businesses, including care chemicals, dispersions, coatings, and construction chemicals. Finally, our Chemetall plant in Pune caters to the automotive industry and specializes in metal surface cleaning and coating.

India still has a low level of chemical consumption per capita. As one of the largest players in the market, how does BASF facilitate the growth of chemicals in the country?

We are in one of the fastest growing markets in the world, a trend that will continue in the near future. India added another US\$1 trillion to its GDP in the past five years, whilst the previous US\$1 trillion took 20 years. The Indian government is putting a lot of effort into setting up manufacturing plants across the country, and we will set up more plants and the opportunity evolves. Our current fo-

cus remains on ensuring optimal functioning of existing plants so that they can achieve full capacity utilization.

How has the new single GST impacted the chemical industry?

GST is making the environment more efficient. For example, the transportation system has become at least 20% more efficient post-GST. A second area where efficiency has been gained relates to warehousing. Previously, we had warehouses all over India because having facilities across different borders allowed optimization of state taxes. This is not needed anymore. We are also seeing efficiencies gained in terms of consolidating our stocking points, and GST is also formalizing the whole economy. Prior to GST implementation, a large proportion of businesses were not in the formal economy. When things become more formalized, companies like BASF will benefit due to our operating experience.

How are you leveraging digitalization to optimize your operations?

We are putting a lot of effort into a number of software and digital initiatives. For instance, more than 95% of our vehicles are now GPS enabled, and we have begun carrying out digital invoicing. 50% of our current invoices are digitized, and we are on track to make all our invoices digital.

Of course, digitalization is a significant topic for BASF globally. We are using digitalization across our manufacturing plants to reduce unplanned shutdowns. BASF has invested in the 65th fastest super computer in the world - Curiosity - and all our research data is now digitized. Digitalization has great potential for R&D in the chemical industry, and we hope to harness it in our manufacturing facilities to optimize our operations.

What is your vision for BASF over the coming two to three years?

Our mission is to continue growing in the market. We would like to be seen as the number one choice among customers and to leave a positive impression on our suppliers and distributors. We are also looking at society's needs for the future, including increasing sustainability and creating new jobs. BASF has also recently invested in a number of companies that specialize in electric vehicles and certain technologies, which is very exciting for us. ■



Sudhir Shenoy

CEO

**DOW CHEMICAL
INTERNATIONAL (DOW INDIA)**

Could you introduce Dow Chemical International's presence in India?

Dow Chemical has been present in India for over 60 years, but our presence has grown dramatically in the last 15 years. This is partly due to the market's rapid growth. Our supply capability has also improved, especially in the last couple of years with the completion of Sadara. Our investment in Saudi Arabia has been a substantial asset in supplying India amongst other markets. A lot of effort has been put into R&D and innovation at a localized level in India, which has enabled us to go after market segments where the needs are very different compared to the rest of the world.

As a company with a global footprint, how are you able to differentiate your product line for the Indian market?

Our application development capability - to be able to adapt our offering to the needs and affordability of the markets in India - is a large piece of what we do locally. Our laboratories enable us to innovate with our customers to find new applications. Other fundamental factors include our integrated supply chain and infrastructure, as well as our ability to provide the right kind of technical service to support our customers.

How is Dow's Pack Studios contributing to your development in the market?

The Pack Studio is an evolution of a journey that we have been on for a long time. We already have multiple laboratory capabilities in India that have grown over the years. What we did with the new innovation center is to combine all of our technologies under one roof. This encourages cross-business collaboration and allows our customers the opportunity to view the entire portfolio and determine what makes the most sense for them.

Globally, Dow has implemented Sustainability Goals for 2025. Within India, what are the key factors driving your sustainability framework?

While we do see that sustainability is becoming an increasingly important factor and has potentially become important to obtaining the license to operate in India in

the near-term, we believe in always staying ahead of the curve. Our efforts are not reactive based on regulatory norms. We see ourselves as thought leaders and role models that raise the bar. We typically compare the local regulation to the company standards and implement the more stringent framework. However, I have yet to identify an instance when the local regulation is stricter - we are always way ahead. For example, we discharge 40% less than what we are technically permitted to discharge.

How are you strategizing growth in India moving forward?

There is opportunity everywhere today in India. The question is, what are we capable of monetizing within our needs, capabilities and availability. We have to prioritize, and our focus is to value-add and move up the value chain. Growth cannot be haphazard. Our focus has to be on profitable growth that is value-based and sustainable. The plastics business is a great example of that.

Our focus is also on technology and solutions that bring value to our customers. Although Dow India typically operates in what we term a polymer or a petrochemical market, we look for segments where there are gaps, where performance improvement is required or where value can be captured by the brand owners.

Could you provide a final message to our readers about the future of the Indian market?

India is an exciting market with a lot of opportunity, but also a lot of complexities. It is still in an evolutionary process. We do not want to repeat mistakes, because it is an industry that has its challenges with respect to the environment, health and safety. We want to learn from the mistakes of other geographies that are perhaps ahead of us. The industry's focus needs to be on issues such as regulatory norms relating to effluent discharge and the safe transportation of chemicals. We strongly advocate for companies to take action and not wait for regulatory forces to do so. For example, we champion Responsible Care and even mentor other companies on the initiative. ■



R. S. Jalan

Managing Director
GHCL

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We use our discretion to suggest which figures are not appropriate to be actors in the public capital market. However, our focus is not to pass judgment on a particular company, but to ensure the quality of the disclosure is as good and as frequent as it can be.



GHCL is one of the leading manufacturers of soda ash in India. Could you please outline the company's business philosophy to our readers?

There are three key components to GHCL's business philosophy. First is to ensure inclusive growth for all our stakeholders, i.e our employees, vendors, customers, investors and society at large. We aim to increase inclusivity of our stakeholders along with profitable growth for the company. Secondly, we believe that our four values of respect, trust, ownership and intergrated team work are key to our success. Our organizational culture is based on these four principles and every employee is expected to live by these values. The third component is our focus on the key driver of growth for our business. In the chemical business, supply chain is one of the key drivers for growth and we are constantly working on making improvements and creating diffentiators in terms of serviceability in this area.

How are you creating added value for your customers?

In the commodities space, we have been able to create value for our customers through service differentiation and partnering with our customers in various ways. In the soda ash business, most manufacturers prefer to work with high volume customers. We cater even to the smallest customer and assure delivery within 24 hours. We focus on on time performance, so that our customers do not have to maintain an inventory. Reverse logistics play an important role in cost-effectiveness as well as assurance of supply. These are important for efficiency of the supply chain, without having a negative impact on costs or on the beneficiary of the supply chain. This adds value for our customers and improves margins by being cost competitive. We also partner with our customers by helping them enhance their own business.

Apart from this, we are the only manufacturer of soda ash in India that has a strategic investment in coal mining. Owning a coal mine gives us a certain competitive advantage. We have also innovated the soda ash making process by using coke briquettes, which has been patented and helped to reduce cost significantly. Finally, operating at 97% plant efficiency helps us to increase our margins considerably. In the last few years, we have set the global benchmark and far outstripped the competition in India in terms of optimum utilization of resources. These measures keep us ahead

of our competition in a 'survival of the fittest' situation.

How is GHCL prioritizing sustainability?

At GHCL sustainability is one of the ways we ensure inclusive growth for our stakeholders. Society is one of our key stakeholders and The GHCL Foundation, our CSR wing, works in the areas of education and skill development, healthcare, and agro and animal husbandry. Our aim is to strengthen local community cohesion and resilience by designing and implementing programs that meet specific social needs.

Apart from this, adopting a holistic approach and making responsible and informed choices lead us to seek solutions that are sustainable across all the three businesses. We re-use the waste generated out of a raw material, as a raw material. We are comitted to water conservation, energy conservation and carbon neutrality. We also believe in complete traceability of raw materials that have been used in our processes.

Do you find regulations, such as the GST and the National Action Plan, are serving as catalysts for change in India's chemicals industry?

The structural changes, such as GST, being implemented by the current government are important for society and business. However, infrastructure development is also key to the fundamental growth and development of the economy, including airports, sea ports, roads, and most importantly, waterways. In the current scenario, the supply chain cost for a product to reach south India from Gujarat is higher as compared to importing it from China. Some investments in these areas are being made now with the Sagarmala project, development of freight corridors, logistic hubs, etc.

What is your vision for GHCL moving forward?

We want GHCL to be a market leader in all the business areas in which we operate. In the chemical business today, we are the largest producer of soda ash in one location, and going forward, we want to be the single largest producer of soda ash in India. Along with the growth in business, our aim is to achieve inclusive growth for our stakeholders. We believe in creating growth responsibly and do not want to compromise on creating value for our stakeholders and our organizational value systems. ■

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Open for Business

The unavailability of feedstock is a pressing concern for India, but for the most part, the chemical sector has much to look forward to. It will come as welcome news for Modi that the leading multinationals are continuing to invest in the country through an array of avenues, including debottlenecking current operations, building new plants and R&D facilities, and through M&A activity. BASF has recently opened its Innovation Campus, with its own R&D center in Mumbai, which caters to the discovery of

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What is relevant to Evonik is how we can cater and customize to India-specific needs, whether that is through localization, greater innovation or customization in application technology. That is where the leverage comes from, after understanding what the global strategy is.



Sanjeev Taneja,
President and
Managing Director – India,
Evonik



Roma Shah & Komal Doshi

SH: CEO

KD: Director

EASTMEN CHEMICALS

Eastmen Chemicals is a 2nd generation family-owned business that was incorporated in 1971. How has the company evolved since then?

RS: We built a successful brand with the introduction of a line of import substitutes that made us a leading player in the 1990s. We manufacture high-purity metallic salts that currently cater to the agrochemical, electroplating, petrochemical, metal finishing and surface treatment (where we are market leaders) and cosmetic industries. Moving forward, we are looking to move into the aerospace industry as well. One of our differentiators is that 50% of the company's employees are women, and in May 2018, we were awarded the Women Entrepreneur of the Year Award from the Indian Specialty Chemicals Manufacturing Association (ISCMA). We have seen increased demand globally in the last few years, and multinational companies are increasingly approaching us for various business and partnership opportunities.

India's specialty chemicals industry is at US\$160 billion and growing. Is there opportunity to incorporate higher value-added derivatives into your portfolio?

RS: Because China is currently experiencing a supply shortage due to new environmental regulations, more companies are looking towards India. This dynamic has created several advantages because we have an abundance of low-cost talent that comes with high-quality products. Moreover, the infrastructure continues to improve, particularly due to Narendra Modi's support of the industry through the 'Make in India' initiative. Consequentially, more multinational companies are approaching us for the supply of high-purity products. At Eastmen



SH



KD

Chemicals, the move towards higher value-add is a positive development because it increases our profit margins and sustainability.

What are the most significant challenges you currently face in the Indian market?

KD: There are a few disadvantages in the market, including high capital costs. Banks are very cautious about lending, and for smaller players, it can be difficult to gain access to cash. In comparison to the West, interest rates are high, and multinational companies benefit from their ability to work on a different platform from local players. The new GST has been helpful for our industry because there is now a single-point tax. Previously, taxation was very complex with duties on entry points across the country, as well as intrastate and interstate supplies. ■

eastmen chemicals

MANUFACTURER AND EXPORTER OF HIGH PURITY METALLIC SALTS SINCE 1971

COBALT COPPER MANGANESE NICKEL ZINC

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Women Entrepreneur of the Year Award by **ISCMA**

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Himanshu Jain

President APAC
DIVERSEY



“The agrochemical business is a very complex business. We have to sell highly complex chemistry to our customers, the farmers, who are in most cases illiterate and poor. The beauty of the business continues to be the ever-growing population of the country. The pressure on the agricultural segment to constantly produce more is driving the growth of the agrochemical industry.”

**- Parikshit Mundhra,
Managing Director,
Willowood**

“**Could you tell us about the Garima initiative that trains unemployed personnel to become hygiene technicians?**

There is not enough consciousness about hygiene and the role it plays in preventing the spread of disease. Several diseases need a preventive approach rather than relying on treatment, but we do not have trained manpower in the hygiene space. As a company, we asked ourselves how we could help solve this problem and thus the Garima initiative was born.

We train individuals to become hygiene practitioners, which also provides employment and dignity. It is a one-week, completely free of cost program, and after candidates pass the course, they receive a certification as hygiene technicians. Due to Diversey's credibility in the industry, participants are able to secure jobs with our partners, which creates a very powerful platform for the less privileged strata of our society. In a span of two years, we certified over 10,000 candidates through a team of 13 trainers at 20 centers across the country. Within a year's time, we have also been able to place over 5,000 candidates in the housekeeping sector with our partner facility management companies. Additionally, we place a strong focus on minimizing waste. For example, we have a hygienic way of repurposing used soaps in the lodging sector. We have created jobs through this recycling program, and we distribute the new soaps to communities that otherwise have little access to or means to buy soaps. This initiative is called Soap For Hope™, and we work with an NGO called Doctors For You that has already reported a decline in recurring illnesses thanks to this initiative.

What is Diversey's vision over the coming years?

Diversey's focus is on prevention rather than cure, and the company will continue enhancing human life by caring for our surroundings and operating in an environmentally and socially-conscious manner. We believe in being courageously caring and disciplined entrepreneurs and in making decisive decisions. While we practice this, we emphasize educating our customers about these principles. ■

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new molecules, particularly for agricultural applications. Huntsman has invested in a greenfield plant in Chakan and Dow India announced the opening of its Pack Studio in Mumbai in January 2018. “The studio is an evolution of a journey that we have been on for a long time,” highlighted Sudhir Shenoy, CEO of Dow Chemical International (Dow India). “We already have multiple laboratory capabilities in India that have grown over the years. What we did with the new innovation center is to combine all of our technologies under one roof. It encourages cross-business collaboration and allows our customers the opportunity to view the entire portfolio and determine what makes the most sense for them.” 28>>



Sanjeev Taneja

President and Managing Director – India
EVONIK

Consumption of chemicals per capita is correlated with development. How does a company like Evonik incorporate this into its growth strategy?

There is a correlation in some cases such as automotive, construction, paints and coatings, but I would not put it as a black and white correlation. For example, increasing consumption of high performance plastic in automotive became a KPI for us. Growth in China and India is a factor too. But again, we have to evaluate what is the relevant market for Evonik and we have to ensure that Evonik's growth engines fit into the overall Indian landscape. Infrastructure, fuel efficiency, sustainability are the mega topics today and in future, and these fit exactly Evonik's core areas such as Oil Additives, Silica, Construction Chemicals, High performance Polymers, health and nutrition. For example, the more tyres that are produced, the more the potential for us.

The majority of Evonik's R&D is carried out in Germany, but you have recently ventured out with a new innovation center in Singapore. Could you tell us about your R&D capabilities in India?

Launching our Evonik Asia Research Hub in Singapore emphasises our focus on the big growth potential and globalization of R&D. This research hub currently caters to the three innovation growth fields - additive manufacturing, smart materials and tissue engineering.

Evonik's R&D in India is focused on health care and catalysts. Our business line - Health Care - has the Research Center India (RCI), which has developed very nicely over the last decade. It is also a good example of leveraging the vast scientific talent pool available in India. It has a global formulation development center enabling the business to be a solution provider to the pharmaceutical and nutraceutical industry, by developing new know-how protected formulations and technology. IP is being generated in Mumbai to cater to global needs.

As per reports, the Indian pharmaceutical sector is estimated to account for 3.1% to 3.6% of the global pharmaceutical industry in value terms and 10% in volume terms. Increased spending on healthcare and a spurt in innovation presents considerable opportunities for us. The R&D facility at Catalysts manufacturing plant facilitates developing new catalysts, improving

existing production grades and technology transfer to production in all product lines at site.

Apart from this we are also enhancing our application technology capabilities in India and this is where we differentiate ourselves from our competitors - our proximity to customers in India as well as customizing to India-specific needs.

Do you believe that an internal distribution model will be the go-to model for multinationals in India?

The internal distribution model works from the regulatory compliance point of view, but that is just the starting point. Companies will be forced to do this due to compliance frameworks. What we are doing is transforming the idea of this model. The biggest advantage of this model is that it enables empowerment, localization and simultaneously increases the proximity to the customer. It is a transformation that enables business managers to act as entrepreneurs.

What are the advantages and challenges of operating in the Indian market?

The opportunities here enticed me to move from Singapore to India. I believe Evonik is moving in the right direction to create a conducive business environment with progress and measures with the GST, demonetization and digitalization. We can argue about the speed of reformatory implementation, because that is still and will be a challenge. The success will depend on what kind of agility we bring onto the table to implement these reforms and how companies cope with this.

Could you share your vision for Evonik India over the next two to three years?

Firstly, our vision is to achieve profitable growth, with a balanced portfolio of products. Evonik India stands for a performance culture that is open and ties into what we are implementing globally. Investment in people is one of the key areas. There is an abundance of talent here, but the skillset needs to be polished. It is not about the quantity, but about how one brings a local talented workforce to a skill level which can cater to the global environment. And this focus on future talents is an extremely motivating task - serving Evonik as well as our local economy in India. ■

Rajendra Gogri

Chairman and Managing Director
AARTI INDUSTRIES



Could you introduce us to the evolution of Aarti Industries and tell us more about its current expansion strategy?

Before 1991, industrial licensing was the norm in India, so we had to put up small-scale units. When licensing was removed, we expanded to a large-scale plant and proceeded with an IPO in 1992. Today we are a multi-location, multi-product company, supplying to various end-user industries. We expanded considerably over the past year leading to growth in terms of volumes. Simultaneously, there has been some margin expansion. Both these factors contributed towards a spike in profits for Q2 2018 when compared last year.

Our business model works on an integrated product line, three of which are benzene-based product lines, and the fourth is nitro-toluene based. There are other products like sulphuric acid and allied products, which are not directly part of the integrated line. This is the broad business model. We focus on both increasing our product range as well as increasing individual existing product volumes to enable us to increase our market share and participate in the global

growth that is taking place. These are the two drivers for volume growth and has been our expansion strategy over the years.

Integration is the main reason we have been able to grow. As we have our own integrated supply chain, our customers are more confident. We buy benzene, which is readily available globally, and that becomes key for customer confidence with regard to supply chain integration.

Could you outline Aarti's R&D strategy?

In the chemicals industry, it is more about process improvements. We have been very pioneers in our process developments, including being the first company to use hydrochloric acid in its gaseous form as a by-product of chlorination to make chloro-sulfonic acid. We have also carried out process innovation in recovery, and we were the first to use hydrogenation technology for reduction on a much larger scale. We are also very strong in our energy recovery systems, such as generating steam from distillations. We have effectively combined the knowledge of both engineering and chemistry in our business. ■

Mr. M P Aggarwal

President and CEO
SAJJAN INDIA



Sajjan was established as a textiles business in 1905. How did the company evolve to become a leading contract manufacturer?

The company's first chemical unit was set up in 1974 to manufacture chemicals for import substitution. As the Indian chemical industry was in its infant stage at that time, Sajjan began introducing key dyestuff intermediates to supply to local emerging dyestuff producers. In the 1980s, an opportunity arose to start exporting to USSR, which became a lucrative bulk business for Sajjan and continued to be so for a decade. Simultaneously, the Indian currency was revalued, increasing the competitiveness of many Indian products in the United States and Europe. This is when Sajjan gained its initial break with German companies and thereafter with companies in the United Kingdom, Switzerland and other parts of the world. In the late 1990s, the company diversified into other specialty chemicals and the range of products continued to increase until today. Aside from selling in India, 90% of Sajjan's sales come from exports.

Have you noticed any changes in the Indian policy framework to make the

environment more supportive to Indian manufacturers?

The 'Make in India' campaign is a serious attempt towards supporting Indian companies. Initial hiccups are to be expected, and the current adverse reactions are more based on invested interests than fundamentals. GST is also a great idea which will greatly decrease costs including initial investment. These initiatives will make India's manufacturing and cost base more dynamic.

What sets Sajjan apart from its competitors and makes it the partner of choice to its customers?

Aside from quality and cost, trust plays a big part in our relationships with our customers. Over 30 years of exposure to foreign markets helps us in generating new opportunities. As intellectual property and patented processes are of great concern to customers, our long-term association with multinationals gives us an edge over many other companies. Customers are assured by our reputation that no intentional leakages or other unethical practices will occur when confidentiality agreements and technology transfers are established. We have not had any litigation or informal disputes occur with any customers to date. ■



Sanjay Trivedi

Chairman

TRIVEDI GROUPE

Could you provide a brief overview of Trivedi Groupe and outline the company's key achievements to date?

Trivedi Groupe has been in the business of manufacturing for more than 45 years, specializing in surfactants and specialty chemicals and the manufacturing of sulfonation equipment used for making water and oil soluble surfactants. The sulfonation business started as a joint venture with Chemithon Enterprises of the United States, and in 2010, we bought out Chemithon's shareholding in India. Moreover, in 2014, we bought them out in Singapore. We now operate under the name of Technithon. We are headquartered in Mumbai and have offices in Singapore and the United States at Casa Grande, Arizona,

which are our regional hubs. Our manufacturing operations are at Casa Grande and Silvassa in India.

Trivedi Groupe provides technology for the manufacturing of anionic, non-ionic, cationic and amphoteric surfactants. We have supplied sulfonation plants across different continents for the past 30 years to clients in India, Germany, the Middle East, Asia, Central Asia and the African continent. We also have a footprint in the environmental sector and have pioneered the control of particle emissions from thermal power stations. We are the only company in India that has over 30 installations for the reduction of flue gas emissions (in particular PM 2.5 and PM 10), reducing ash emissions by a few thousand mt/y.

Could you elaborate on the technologies supporting Trivedi Groupe's operations?

We have patented technology for continuous sulfonation processes for alkyl benzenes, methyl esters, olefins, alcohols and petroleum alkylates. In 2017, we also obtained two new patents for our annular and multi-tube reactor designs. We aim to be the leading manufacturer in terms of technology and innovation by offering modular plants and skid mounted solutions. Since our establishment, we have improved on equipment designs and processes to minimize by-products.

We are now working on developing sustainable technologies that are environmentally friendly, with the aim of a reduced CO₂ footprint, lower emissions and energy consumption, lower capital costs and increased flexibility of processing aliphatic and aromatic alkylates. With regards to our environmental division, we are developing hydrogen generators for the automotive industry where hydrogen and CNG are combined to be used as fuel. This combination reduces air pollutants and NO_x emissions by 60%.

Trivedi Groupe performs a diverse range of functions within its various subsidiaries. Besides manufacturing, what are the other focuses of the company?

Trivedi Groupe believes in being innovative and providing leading edge solutions to the market. Trading comes as a secondary activity for the company and it relates to the plants we have built.

Trivedi Groupe is also involved in developing technologies for the manufacture of soap in emerging markets in Africa. We have a joint venture with a company called Bio-therapeutics - one of the only companies in the world that has developed machinery generating currents at one-millionth of an amperage with frequency modulation. These machines are used for medical applications and skincare. We are currently focused on developing concentrated laundry detergent packed in a water-soluble film.

What current market factors are driving your product innovation?

Sustainability and greener products are becoming key aspects within the market. Green surfactants have the benefit of being environmentally friendlier, safer to use and more cost-effective. Price is also a driver for product innovation as most consumers in India do not have a high disposable income. The Indian consumer is very cost-sensitive and aims to be as cost-efficient as possible. Sustainability is one of the key drivers in the market, if it can be accomplished at an affordable price.

Where are Trivedi Groupe's R&D activities based?

Trivedi Groupe has two research lines - equipment research, which includes the development of new technologies and techniques, and applied research, which is research into formulations and manufacturing products. Our R&D activity is carried out as an individual company, as well as through industry affiliations. We have R&D activities in India, Singapore and the United States. We invest heavily in research and innovation, and our research budget is at least 5% of our revenue.

Could you provide a final message to our international readership?

Trivedi Groupe provides single stop solutions for surfactants and specialty chemicals with application research for maximizing value. We build relationships with industry players and provide guidance and systems that can benefit the surfactant industry and ultimately the end consumer. We also build supply chains for our customers' products and connect our clients with end users. The company aims to continue to innovate and develop sustainable solutions that are cost-effective. ■

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Specialty Chemicals

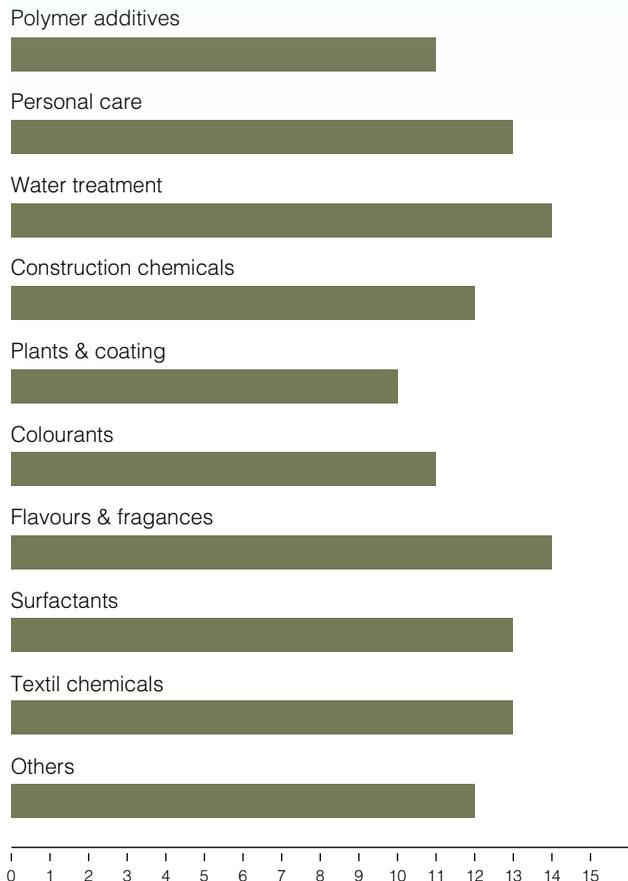
With APAC's specialty chemicals market expected to increase from US\$259.6 billion in 2017 to US\$361 billion in 2023 - representing a CAGR of 5.7%, according to P&S Market Research - India's specialty chemicals industry is more than keeping up with the region's rapid development. All the key segments of specialty chemicals are set for double digit growth over the coming five years, including a CAGR of 13% in personal care and 10% in paints and coatings, according to India Ratings and Research. Vinay Patil, president for the Indian Specialty Chemicals Manufacturers Association, has witnessed a number of shifts within the specialty chemicals space in India. "There has been a significant rise in the production of functional chemicals, especially for corrosion prevention and electroplating. There is a clear move from companies moving towards low-volume, high-value productions. Moreover, companies are demonstrating awareness in understanding their customers' needs and finding new innovative solutions to address them," said Patil.

With a large pool of readily available, well-educated talent, more specialty chemicals are being produced in India, and not just for India. Local companies are exporting their value-added products across the globe, underlining the quality of research being undertaken. Leveraging their technological expertise, a number of domestic companies are setting a strong example for the industry to follow. Gharda Chemicals, founded by the prominent chemical engineer Dr. Keki Gharda, has prospered from a strong and vibrant R&D program and its expertise in process development. Some journeys have been less smooth but just as fruitful. Dharamsi Morarji, headquartered in Mumbai, had to undergo a set of transformations in its past to survive, having been a leading producer of phosphates and agrochemicals in the 20th century. The company has now found its niche in the research and manufacturing of sulphur chemicals. "We have undergone significant restructuring and now consider ourselves as one of the best companies in the world handling hazardous chemicals," said Bimal Goculdas, managing director of Dharamsi Morarji. [33>>](#)

GROWTH PROJECTION FOR KEY SEGMENTS OF SPECIALTY CHEMICALS SECTOR

Source: IMF

Estimated growth rate for FY18-FY22 (RHS)





Bimal L. Goculdas

Managing Director

**DHARAMSI MORARJI
CHEMICAL COMPANY**

Dharamsi Morarji has now transformed itself into a leading chemical company in India following a long presence in phosphate production. Could you give a brief introduction to the company and its evolution?

Dharamsi Morarji was founded in 1919 and is currently in its 100th year of operation. The company started as a producer of sulphuric acid, and we established the first sulphuric acid plant in India. The company then expanded into phosphate fertilizer, and for most of our existence, Dharamsi Morarji was known as a fertilizer company. At one stage, we had five different locations producing phosphate fertilizer, and we were producing approximately 500,000 mt of single superphosphate. In 1992, government policies changed and different rules were implemented for different fertilizers. The government preferentially subsidized some fertilizers over others - such as imported fertilizers, diammonium phosphate and urea. The product that we made was given a disproportionately low subsidy.

At the turn of the millennium, we started to expand our chemical segment and invest heavily in R&D, people and equipment. One of our strengths was knowledge of how to handle hazardous chemicals, and thus the aim became to produce more downstream products for the chemical market. Today, we have completely extinguished our fertilizer business and only operate within the chemicals space. We have undergone significant restructuring and now consider ourselves one of the best companies in the world for handling hazardous chemicals. We focus on chemistries where we are fundamentally strong and have already added to our product portfolio since we reinvested into the chemical space.

Dharamsi Morarji specializes in four major segments. What is the company's key strength?

Value-added derivatives are one of Dharamsi Morarji's key strengths. At our major site, we have a sulphuric acid plant as well as on-site downstream products such as chlorosulphonic acid, oleums and liquid sulfur trioxide. We also have dedicated plants for downstream products as well as multipurpose plants where we produce low volume, high-value products. We are offering a service to our customers by handling the hazardous chemicals part of their process and supplying them with a downstream product that is safe.

Could you elaborate on Dharamsi Morarji's involvement in the Responsible Care initiative?

I am involved in the initiative in two ways - through Dharamsi Morarji's involvement and through the Indian Chemical Council as the chairman of the Sustainability Committee. One of the key focuses of the sustainability committee is to spread Responsible Care within the chemical industry in India. We want to encourage companies to work in a safe manner not only within their plants, but also outside of the plant. Dharamsi Morarji has a significant focus on sustainability and safety, and we are building an ecosystem that encourages this.

Dharamsi Morarji is present in five continents and 25 countries globally. What is the company's export strategy?

Dharamsi Morarji supplies intermediates to many different industries. Several companies within the chemical industry have moved their manufacturing sites to India, and thus, we do not export our products to them but rather to their manufacturer in India.

We have been exporting products for a significant time period, and we are trusted in the global market. We are audited under Together for Sustainability (TFS) and welcome audits by customers. The market is not only looking for product and price anymore, but also sustainability, consistency and reliability.

What is Dharamsi Morarji's strategy and vision moving forward?

Dharamsi Morarji strategy is to expand our value-added product line, but only in products where we are certain of our edge over the competition. We do not only want to grow our top-line, but also our bottom-line, and we aim to be the leading company in the world in our niche line of products. We heavily invest in R&D and product innovation.

Dharamsi Morarji's vision is to be the most respected company within the intermediate chemical industry. We want to be respected in terms of shareholder value, how we treat our people and the communities around our sites, how we treat the environment and health and safety. We have been in existence for 100 years and we will always prioritize our integrity. ■



Shernaz Wakil

Chairperson and Managing Director
DAI-ICHI KARKARIA

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Could you please introduce us to Dai-ichi Karkaria and underline your recent developments?

Dai-ichi Karkaria, one of the pioneering specialty chemical companies in India, was started in 1963 in technical collaboration with Dai-ichi Kogyo Seiyaku of Japan. They helped set up our first plant in Dahej, provided the training and the foundation technology. Over the years, Dai-ichi has developed its own set of products based on foundation technologies, including alkoxylation and polymerization. We have built on the technology and the skillsets, which gave us a certain way of processing and ensuring quality. We now operate three plants in Pune, Dahej and Kurkumbh. Each plant is equipped with multipurpose reactors, R&D laboratories, and warehouses to produce and store a variety of specialty chemicals for a number of end-user industries.

We are currently focused on doubling capacity at our Dahej site with a new plant. The rationale behind this was to increase our footprint as part of the Petroleum, Chemicals, Petrochemicals and Investment Region (PCPIR). The plant itself will be a digitalized state-of-the-art facility. As we work with ethylene oxide, a hazardous gas, we wanted to work with the best in class – Buss AG. We decided that safety, comfort and plant efficiency were priorities not to be compromised. For us, it was the key differentiator in a very crowded market.

For a specialty chemical producer seeking to produce higher value-added derivatives, R&D is pivotal. Having recently won an R&D award from the Department of Science and Technology, could you tell us about your R&D capabilities?

R&D has always been in our DNA as 80-90% of our products are customized. As part of our process, we study the needs of our customer in depth and examine what kind of performance they need. 90% of our chemicals are performance chemicals and all our customers have been with us long term. Due to our strong commitment, we have maintained strong relationships for the past 40 years. We are also increasing our customer collaboration through an application laboratory at Dahej.

As demand continues to increase in a number of end-user industries in India, are you entering into any new verticals?

We have gravitated towards oilfield chemicals and almost 45% of our business has been focused on that area due to our partnership – following a joint venture in 2010 - with Nalco Champion. However, with our new ethoxylator, we want to venture into other verticals, including personal care. It may take a year for us to develop the necessary products that are required in the market. We will begin by developing a number of commoditized products before focusing on the development of higher value-added products.

With respect to the PCPIR at Dahej, are you seeing the ecosystem develop?

There have been a number of challenges with the PCPIR, so the development of the ecosystem has been at a slow pace. It was supposed to have an anchor tenant, who was meant to supply feedstock to the downstream. However, this is yet to happen. We have been trying to communicate to the government that the actual functionality for which the PCPIR was set up is not being served. Moreover, there remain clear issues with respect to providing power and water supply. In many ways, promises have not been fulfilled even though advance payments were taken.

Are you seeing a positive impact of the GST levy in the chemicals sector?

For companies in the organized sector, GST has been a bonus, as it is seamless with no octroi. We are yet to see a major difference with the implementation of the GST although it may be a gradual shift. Despite this, I do believe competition has increased across the country as there is now a level playing field with more interstate competition.

Could you share your vision for Dai-ichi Karkaria in India over the coming few years? Sustainability will continue being a core focus of the company and we strongly believe in maintaining our value system and culture over the coming years. We have always formed long-lasting partnerships with our customers and hopefully that will continue. There is a feeling of trust that we enjoy and dependability with respect to quality. ■

Harshad Naik

Managing Director, India
HUNTSMAN



Can you give a brief overview of Huntsman's operations in India?

Huntsman's journey in India started in the 2000 and since then, we have been participating in different markets relevant to the chemicals that we produce. The company is represented in all four business verticals in India – textile effects, advanced materials, performance products, and polyurethanes. We believe in local manufacturing to serve local markets, and to this effect, we have sites in Baroda, Ankleshwar, and Pune. The company also has a network of tolling arrangements to make local products for our customers. The main end-user markets that we serve include textiles, agrochemicals, automotive, aviation, footwear, intermediate chemicals and construction.

Can you highlight a case study within the Indian market that showcases Huntsman's innovation and capabilities?

India had an aim to provide shoes to every pair of feet within the country because footwear was extremely expensive. The only way that quality products could be manufactured at an affordable price was to bring in innovative technologies. Huntsman and the polyurethane industry pioneered the landscape to bring a polyether solution into the

manufacturing of footwear. This enabled mass production at an affordable cost for the Indian community. The footwear comes is highly durable at affordable prices.

This is an example of identifying a need in the market, working relentlessly, developing technologies, bringing in expertise, and combining all resources as to create a solution for an industry. We are very clearly the leader in India with regards to the polyether footwear industry.

Can you elaborate on how your greenfield site at Chakan supports your polyurethane business?

Huntsman acquired the polyurethane business of ICI India to set up a system house in Mumbai. After the acquisition, we moved our polyurethane business, and the company's greenfield site was established in 2012 in Chakan, Pune. From this site we serve the polyurethane market. We have the capacity to make approximately 35 kilotons of chemicals and formulations. The key success factor for polyurethane is to have a system house, which comprises of quickly made formulations that are tailor-made to our customers' needs. We have pioneered local manufacturing in India's polyurethane industry. ■

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Haresh Dadia & Vishan Dadia

HD: CEO and Managing Director
VD: Director
DADIA CHEMICALS



HD



VD

R&D is one of the most important factors for specialty chemical producers that are seeking new value-added derivatives. Can you tell us more about Dadia Chemicals' emphasis on its R&D capabilities?

HD: During a time when traditional chemistry was being practiced, Dadia Chemicals was a pioneer in incorporating new chemistry based on innovative R&D. In 1992, Dadia Chemicals was the first player to develop whitening fat liquor, DECIL, which was a completely new product to the world and used as a major component in the leather industry. Following this discovery, the Dadia group of companies garnered much international attention, sparking the beginning of many key relationships with clients from Germany, Spain, the Netherlands and South America. We employ a different mindset when it comes to research because we believe there are no boundaries in the world of chemistry.

Green chemistry and innovation around sustainability are taking the industry by storm. Are these trends directing your product innovation?

VD: Sustainability is a key focus for when we develop new products. We are always looking out for greener chemistries that can provide sustainable solutions to future generations and create a more environmentally friendly world. The majority of our customers are multinational companies, and going green is key for these players. We are one of the first companies to introduce polymer chemistry-based products in the leather industry, which is now a significant trend. The leather industry depends on chromium, which is a major tanning agent across the world and also highly hazardous to the environment, rendering soil unusable. Dadia was the first manufacturer to focus on research of chromium replacement. We are working closely with the Central Leather Research Institute, and have developed a partial replacement of chrome using a biodegradable, eco-friendly and metal-free product.

HD: Our product is also economical, because whenever we develop a replacement, we recognize that it either needs to be the same price or more competitive. We are currently searching for strategic partners with whom to go to market. ■

Dr. Keki H. Gharda

GHARDA CHEMICALS



In India's complex supply chain network, how is Gharda able to meet the demands of its diverse customer base?

In our country with such wide diversity, meeting the ever growing customer's requirements poses a huge challenge for any manufacturer.

In this regard, GCL has an efficient distribution network with a global presence in many countries. All our crop protection chemicals have registrations in several countries. The strong integration between purchase, operations and marketing teams enables the smooth flow of materials from producer to customer. The close proximity of our manufacturing sites to India's ports leads to timely supply of our products to our domestic and international customers.

In addition, based on our customer's needs and buying capacity, we have pursued continuous development in technology and introduced new products (polymers, pigments, metals) with varied applications. Also, we have a great pipeline of crop protection chemicals that would address the current agricultural needs of the people. Thus, we have strived to maintain a balance between customer's requirements and our products with an efficient network of technology, pricing, inventory, operations and distribution.

What are the current advantages and challenges of operating in the Indian market?

Considering the diverse nature of India, there exists plenty of opportunities for growth in terms of new and wide applicability products. Since many products are also on the verge of going off-patent, it offers the advantage to explore local as well as global markets. In addition, government initiatives like 'Make in India' further provide opportunities for innovating and manufacturing a wide range of products.

Nonetheless, the Indian market has several issues like high dependence on raw materials, inadequate infrastructure and facilities, regulatory and environmental issues, complex tax structures etc. The crop protection chemicals business faces some additional challenges of climate and calamities along with long lead time for registrations.

At GCL, we have combined good chemistry and good process engineering to cope up with these challenges. We have tailor-made a lot of products for the Indian customer and have been successful in competing favorably world-wide. ■

Ajay Durrani

Managing Director
COVESTRO INDIA



With Bayer recently selling its last stake in the company, could you introduce our readers to Covestro and the company's presence in India?

Over the past three years, Covestro has successfully established itself amongst the top 30 DAX companies. We are driven by our fundamental belief and purpose, 'To make the world a brighter place.' Our presence in India is extensive, including three manufacturing facilities, including a color competence and design center and developmental center in Greater Noida, manufacturing of polyisocyanate mainly for the application of coating in Ankleshwar, Gujarat and a manufacturing unit of TPU at our Cuddalore facility.

Can you provide an example of your product innovation?

One of our products uses agro-waste as a raw material for the manufacture of aniline. While its still in the initial phase, we are committed to sustainability and hope to see more such investments in the future. We have been able to harness technology and although currently it is on a smaller scale, eventually we

will be able to scale up these areas. In India, we are driving innovation through our application development labs, which focus on various areas of development.

As a company based in Germany with manufacturing capabilities in India, how does the 'Make in India' initiative affect you moving forward?

'Make in India' began by examining the industry that has the largest import bill, which is currently the electronics industry in parallel to petrochemicals. Today, the government's primary concern is to reduce dependency on imports. A great example is Samsung's factory established at Noida in the north of India, which is the world's largest mobile manufacturing plant. It provoked significant investments not only from Samsung, but also from other mobile manufacturers who have established their plants in different parts of India. This is going to be a big game changer in the future, and when companies like Samsung, LG or other big manufacturers establish a plant in India, this creates opportunities for us to supply our products, which are also manufactured in India. ■

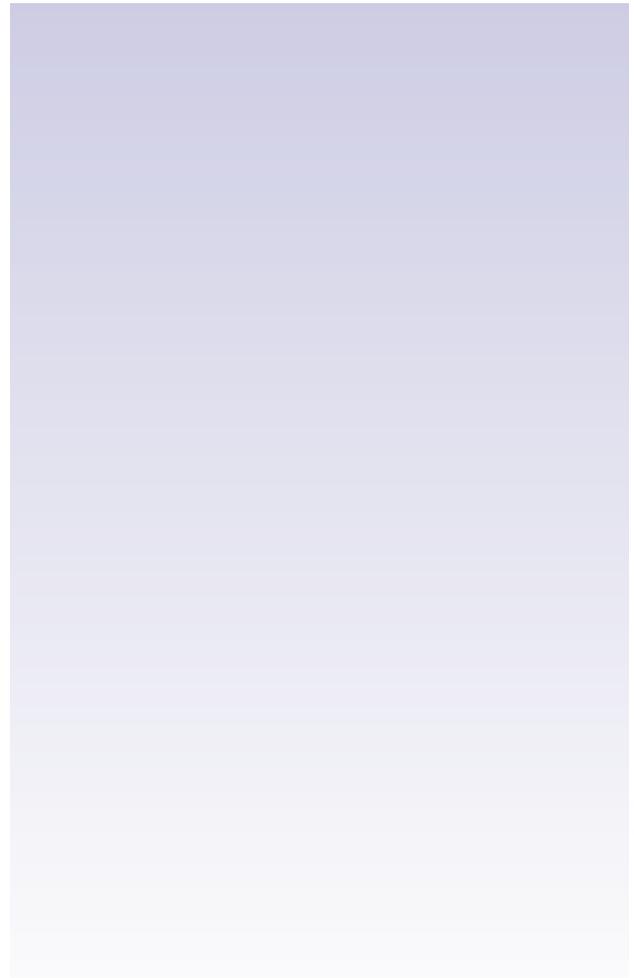
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Agrochemicals

India's agrochemicals sector is expected to reach US\$6.3 billion by 2020, with domestic demand growing by 6.5% annually and a 9% annual growth in exports according to FICCI. As India's agricultural sector continues to modernize, the use of agrochemicals has witnessed large scale growth, particularly due to the increased usage of crop protection products and pesticides. The industry remains dominated by the large multinationals, including Bayer Crop Science, BASF, and Syngenta. FMC has strengthened its hand in the market by acquiring DuPont's crop protection business in November, 2017. The acquisition has put FMC India as one of the top three market leaders with an industry leading portfolio of insecticides. Both industry and consumer are becoming more astute with respect to the benefits of crop protection. Pramod Thota, president of FMC, has also noticed a shift in attitude from the growers themselves becoming less cost sensitive. "The grower is now able to understand new innovative chemistries and the value they bring and is willing to invest in them," he said.

Given the clear opportunities in the market, there is a cluster of local companies across the country, most noticeably Bharat Rasayan, Dhanuka Agritech and Insecticides India, that are expanding to meet growing demand. For example, Willowood has recently completed its new in-house R&D facility and has seen significant growth since its inception ten years ago. "Since 2008, the entire chemical and agrochemical sectors have done well. Most companies operating within this space have seen significant growth. We were fortunate to enter the market at a time when there were significant growth opportunities available," said Parikshit Mundhra, managing director of Willowood.

According to the IBEF, 58% of the Indian population relies on agriculture as its primary source of livelihood. Despite India being the second largest consumer of agrochemicals globally, the per capita usage of crop-protection products is comparatively very low when compared to the more developed countries across Asia. Given the vast size of the market and the fact it remains largely untapped, agrochemical companies, both domestic and international, are being gifted a window of opportunity. ■

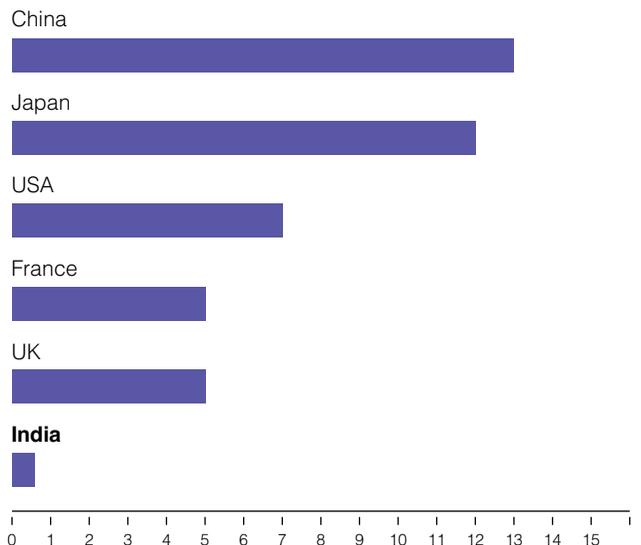


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CONSUMPTION OF PESTICIDES PER CAPITA (Kg/ha) 2016

Source: IMF

Estimated growth rate for FY18-FY22 (RHS)





Pramod Thota

President
FMC INDIA

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Could you tell us about FMC's recent acquisition of DuPont's agro business and the structure of the company in India?

On November 1, 2017, FMC acquired a significant portion of DuPont's crop protection business. We are currently in the process of integrating these world-class assets. This acquisition has put us in the top five R&D-based crop protection companies globally. Within the market in India, FMC is one of the top 3 market leaders with an industry-leading portfolio of insecticides.

How central is inorganic growth to your strategy for expansion in India?

If you look at our historical growth, it has mainly been organic, with some inorganic growth. Our recent inorganic acquisition of DuPont's crop protection assets has put our combined estimated full-year 2018 earnings between US\$4.1 billion to US\$4.3 billion globally. Within India, this acquisition has helped us expand our market reach as well as strengthen our product portfolio. Moving forward, we plan to launch more than 10 new innovative products in the market over the next five years. These products are focused on the high value-add segments for the growers. Therefore, a lot of our future growth is centered on organic growth.

Can you elaborate on FMC's R&D investments in India?

FMC has conducted critical R&D in Bangalore, India for a long time. Through the recent DuPont portfolio acquisition, we now have acquired a state-of-the-art research facility at Hyderabad, now known as the FMC India Innovation Center. At this facility, we carry out the basic discovery activities of new molecules and their potential for crop protection. R&D activities at this center support our global R&D headquarters based near Wilmington, DE, USA to bring out newer molecules of interest with unique mode of action to commercialization. In a nutshell, from India we are conducting discovery activities that could very well help other regions of the world.

As FMC in India serves both the domestic and export markets, what drives the company's product innovation at its R&D facilities in India?

Innovative chemistries are in high demand globally. A few factors drive the demand for innovation. Firstly and most importantly is the transition to a safer, greener chemistry that is aimed at reducing the environmental load of the chemistry while getting the same sort of efficacy on the biotic problem one is trying to address such as an insect pest, weed or fungal disease. The second factor centers on the health effects of the products on the food that is being grown. There is a lot of consumer expectation for the industry to move toward safer pesticides and biologicals. Inherently, we want our products to be safe for farmers as well as those who are applying them in the field. This describes the demand side of it.

The other factor that drives innovation is around the complexity of nature. What worked a few decades ago may no longer work due to resistance, etc. Nature innovates faster than some of us can, so today's solution may not be effective tomorrow. It is a constant battle and one always has to be innovating to find the products that will address tomorrow's needs.

India's agricultural sector is defined by its complex network. How are you able to understand your customers' varying needs?

We are very intimately connected with our customers at the grassroots level. Our teams are constantly understanding the present and future challenges that the farmers may face. We do this through organized outreach campaigns in the field, such as field days, harvest days, village outreach meetings and flash campaigns depending on the crop, geography and season. During these interactions, we do deep exploration of their critical visible and latent needs along with their expectations from our prod-

ucts. We have a very robust portfolio, and we offer a compelling value proposition out of this portfolio through these activities. Their needs direct our innovation processes, and farmers and growers are communicative about telling us what they want. It is a matter of capturing that intelligence in a disciplined manner and feeding that into our new product development process. It is really about being close to the farmers and being with them in the market.

Is the drive towards greener chemistry coming from consumer demands or India's stringent agricultural regulatory framework?

The drive is primarily emanating out of our commitment toward sustainable agriculture and safe food. Having said that, we acknowledge that the Indian regulatory system is amongst the most robust and comprehensive globally. Along with the more advanced regulatory bodies such as USFDA, the Indian system is also gradually prodding the industry towards safer and greener alternatives. Of course, another constant driver is the changing consumer demand for safer food and lower environmental footprints.

What are the advantages and challenges of operating in India with respect to FMC?

The fundamental drivers of growth in India are very strong as the usage of crop-protection products in India is still very low compared to other countries like South Korea, China, Japan and the United States. The grower is now able to understand new innovative chemistries and the value they bring, and are willing to invest in them. They are not necessarily looking for the cheapest fix.

There are some areas of challenge with respect to development. What we look for is a consistent, predictable, science-based and stable policy environment that encourages investment. Today, we face a constant wave of change in the government, political and regulatory environments. These frequent changes coupled with regional variances make it difficult for companies like us to strategize to invest here. A state in the south may decide to cancel a particular product, while a state in the north may want to review 20 pesticides, for example. There is a lot of noise with every state trying to do its own thing. Picking a path and staying on it becomes a challenge for us. A more harmonized and stable policy regime coupled with positive moves such as protecting our IPs and regulatory data, prioritizing approval of newer chemistries, and strong action against counterfeits and spurious manufacturers would go a long way in attracting investment here.

What is your growth strategy for FMC in India?

The growth vision for India business is based on three drivers. Currently, we are the leaders in insecticides. We plan to expand our herbicide and fungicide portfolio. For that, we are looking at a number of new products to be launched in the next three to four years, which will be a significant driver of growth.

The second element is how to create more value for the grower, not just in terms of products, but also in terms of solutions. We are looking at developing holistic solutions across the pest, weed and disease spectra to offer effective but affordable ways to solve grower problems.

The third area is in terms of services. We are looking to partner with other companies to offer a full suite of services. For example, if waste is generated by a sugarcane farmer, do we just let them burn or figure out opportunities for them to make the best out of waste?

Apart from products and services, we are investing in people. We see a lot of opportunity where we can upgrade our talent base.

Tying into both the 'Make in India' initiative and also the stringent environmental regulations in China, do you see new export opportunities for FMC India?

The situation in China is an opportunity for India to advertise itself as the next big destination for chemicals manufacturing. We are not immune to it as lot of our production supply comes out of China. Companies do not like the uncertainty that comes with politically-driven regulatory and economic environments and that is what is happening in China, so for those looking at alternatives, India ranks high in such conversations right now. We are actively contemplating investing in some manufacturing capabilities within India and believe that India will be a future hub of manufacturing not only for our existing products but for some of the new R&D molecules that are in the pipeline. In order for us to invest in India, we need the support of the government.

What is your vision for FMC in India moving forward?

I envision FMC to be a socially responsible company that is delivering innovative and safer solutions for growers in India, to not only serve the growers' needs but also address food production, food security and food safety. I would underscore the point of being environmentally and socially responsible, which is the key. ■

FMC

INVESTING IN THE FUTURE OF INDIAN AGRICULTURE.



OUR VISION:

To be a leading, innovative provider of technologies that help feed diverse populations seeking a nutritious, sustainable food supply.

OUR VALUES:

Highest ethical behaviors, safety & health, sustainability & respect for people.



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Distribution & Logistics

"India's growth is here to stay. China has its own growth path but that growth is largely state driven, whilst India's is more market driven. India is a market that will deliver growth for a long time."

- L Balakrishna,
Managing Director – India,
Brenttag

Understanding India's Complex Supply Chain

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The distribution of chemicals in India has been historically laden with complexities, given the vastness of the market. Understanding the various distribution channels across 29 states, as well as the differing languages and cultures, is a tall order in itself. L Balakrishna, managing director for India at Brenntag, highlighted that international players entering the market would be at a greater advantage working with a known

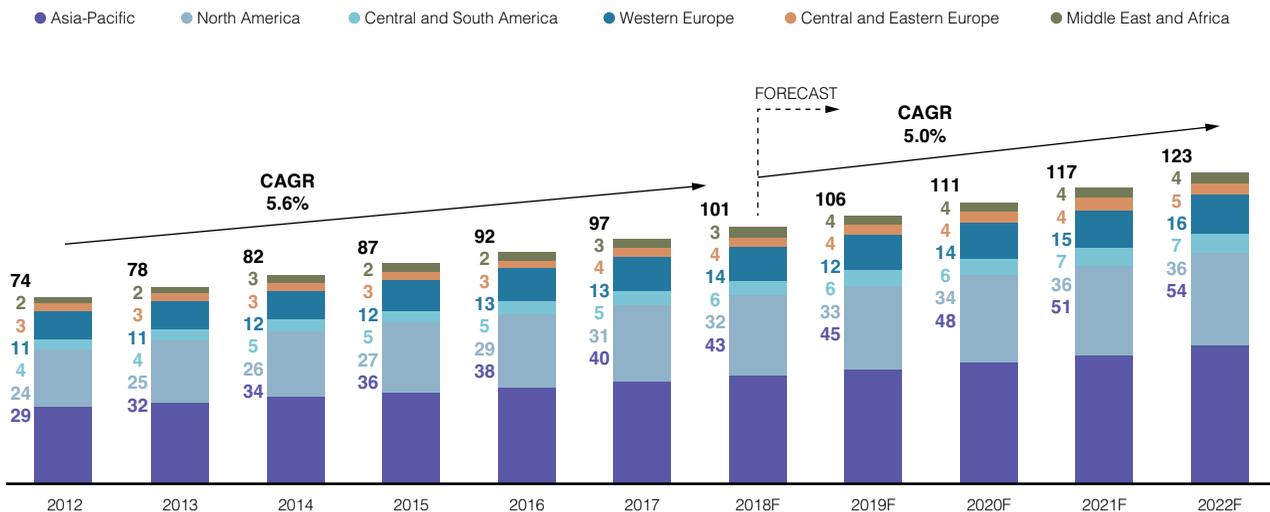
distributor. "Without our localized expertise, they are likely to face a range of issues, including understanding India's complex tax structures, the regulatory framework and supply chain," said Balakrishna. Fortunately, due to the introduction of the GST, certain challenges facing distributors are being reduced due to a more streamlined taxation procedure across states as well as a more efficient logistics process. This has

come at the right time as a greater number of international manufacturers eye market entrance. This has motivated Brenntag to open a state-of-the-art, 100,000 sq./ft warehousing facility to centralize its operations in the west of the country. As more manufacturers enter the market and choose to outsource their distribution, greater demands are being asked of distributors. "Distributors still profess the old

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SPECIALTY CHEMICAL DISTRIBUTION BY REGION (€billions)

Source: Boston Consulting Group





L Balakrishna

Managing Director – India
BRENNTAG

Brenntag first entered India with the acquisition of the Rhodia distribution network in 2008. Can you elaborate on its expansion strategy since then?

We further strengthened our position with the acquisition of EAC Industrial Ingredients in 2010. M&A has been an integral part of our growth strategy in India, and we most recently acquired a 65% stake in Raj Petro Specialties, which distributes its own blended brands of petroleum-related products. This is a perfect fit and complement to our current product offering. Raj Petro Specialties has a foothold in many industries in which we are not present, including white oil, petroleum jetties and certain lubricants. It also provides us with a scale of operation that we did not previously have in India, including blending and packaging facilities.

India has been a strategic priority and a key investment target for Brenntag. Away from M&A activity, how has the company demonstrated its commitment to the Indian market?

We recently celebrated the completion of our state-of-the-art, 100,000 square foot warehousing facility. We invested substantially into the facility and it underlines our commitment to this market as well as the safety of our employees. It brings together the previous five warehouses we had across the western region under one roof. It is more compliant and efficient, as well as having the capacity to take care of our warehousing requirements for the next five years. Moreover, we have continued to invest in our organization in India and our employees, whose expertise is the bedrock to our success.

What are the main challenges facing end-users and suppliers in India?

One of the challenges most customers face is optimizing their supply chain costs. Through our customer centricity program, we are able to help our customers consolidate their supply chain through one channel. Instead of having 50 different vendors supplying products, they are able to reduce this to only five vendors.

International suppliers face the problem of understanding such a vast market, especially given the differences in language and culture across the sub-continent. All suppliers want to be in India. However, without our localized expertise, they are likely to face a range of issues, including understanding In-

dia's complex tax structures, the regulatory framework and supply chain.

With a supply shortage in China following new environmental regulations affecting global distribution channels, how do you expect India's role as a supplier to evolve?

India is going to become a regional manufacturing hub. The government has launched the 'Make in India' campaign and a lot of effort has focused on making the regulatory and macroeconomic environment conducive to this. However, India remains a net importer of a number of feedstocks and the right import strategy needs to be put in place. Recently new import procedures have been eased and the time taken to clear shipments has become more efficient. Additionally, the new consolidated tax structure – the GST – led India to increase by 30 places in the World Bank's 'Ease of Doing Business' index.

India still has very low consumption of chemicals per capita. What role can Brenntag play to increase chemical usage and subsequently development?

Many of India's industries remain underdeveloped in terms of usage and consumption. With respect to agrochemicals, how does one feed 1.3 billion people? It is only by increasing the efficiency of agriculture, and the agrochemical industry will have to innovate to facilitate the development of more tailor-made products. This is where we are able to connect our suppliers and end-users to help develop the necessary solutions. This needs to be replicated in all our end-user industries, including paints and coatings, feed, mobility and personal care. Businesses are expected to step up and meet the growing demand.

Could you provide a final message for our readers from Brenntag about the market potential in India?

India's growth is here to stay. China has its own growth path, but that growth is largely state-driven, whilst India's is more market-driven. India is a market that will deliver growth for a long time. There are many companies that are focusing on India, including ourselves. Brenntag is constantly looking at more acquisitions to take us to the next level. If anyone is doubting India or still thinking about being here, they should just take the plunge and invest. ■



Tejas Parekh

Country Manager

CONNELL BROTHERS

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Could you provide a brief introduction to Connell Brothers' presence in India?

Connell Brothers is the largest marketer and distributor of specialty chemicals and ingredients in APAC and has been present in the region for 100 years. Connell Brothers India began its operations in 1999 at a time when foreign direct investment (FDI) was just beginning to filter into the country. As we were relatively late to India, compared to the rest of Asia where we have been present for much longer, we made an extra effort to land the right partnerships with manufacturers. One of our key advantages is that we are a very renowned brand across the region, and based on our local and regional strengths and processes, we were able to build successful partnerships with leading specialty chemical manufacturers.

Connell Brothers recently acquired the personal healthcare distribution business of Mascot Universal. How have you strategized your growth in India?

Our initial years in India were spent on organic growth and building the right team across the country. By 2009, we were actively looking for acquisitions, and we completed the acquisition of Mascot Universal in 2015. We are very particular about which industries we want to grow into and the investments we want to make.

We currently service customers in 24 Indian states and two union territories. Our growth strategy remains focused on increased penetration and keeping up with evolving consumer lifestyle needs. Geographic regions that may not have been so attractive previously have become so in recent years. At the same time, we have entered new verticals as India has further developed in terms of product innovation and growing consumerization.

Can you elaborate on the value-add services offered to your customers?

We take pride in the fact that we provide quality products with full product traceability and localized teams on the ground to support application development at a customer end. We are always looking at ways to be more customer-centric. This includes investments in smart logistics update solutions, high-end finished product-testing capabilities and of course access to our regional platform for innovation, trends and ideation.

According to Boston Consulting Group, only 40% of specialty chemicals are dis-

tributed by distributors. In a market as complex as India, do you believe this is likely to change?

The distribution business is changing, and there is going to be much more emphasis on recognizing the value that distributors bring. Distributors still profess the old school value that 'we are able to receive and deliver the goods to our clients on time.' However, moving forward, I believe that customers will only use those distributors that can provide added value to their business. As user markets like India mature for specialty chemicals, there will be more opportunities for channels that deliver more than just a product.

How has the changing regulatory environment, including new tax reforms, impacted your operations?

We have always prioritized compliance, however, we would encounter a certain set of customers where this was less of a priority. New laws have meant that unorganized companies have been forced to comply. We have had a regulatory desk in India for the past six years, and we are constantly working with SMEs to help them understand the nuances of our products and how our products fit into the regulatory structure.

How has a shortage of supply coming from China due to enforced environmental regulations affected your global distribution channels?

Our suppliers have been generally based in North America and Europe, but we are attuned to the fact that we may need to ship our products from other locations, including China. If and as manufacturing locations change for our large principals, we know it will not impact the quality of product that will be delivered. If India is able to increase its manufacturing capabilities, it would be very beneficial to a lot of companies, both domestically and regionally, as the country has certain strategic advantages.

As the 'Make in India' campaign gathers momentum, what advice would you give to the stakeholders involved?

Science needs to be left to the scientists and industry to the industrialists. The government should not be the driver of this change, but rather a facilitator. The scientists and industrialists are smart enough to determine the right path and should have the ability to do so, if the conditions are made more conducive. ■

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school value that ‘we are able to receive and deliver the goods to our clients on time,’” remarked Tejas Parekh, country manager for Connell Brothers. “However, moving forward, I believe that customers will only use those distributors who can provide added value to their business. In that context as user markets like India mature for specialty chemicals, there will be more opportunities for channels that deliver more than just a product.”

Indeed, there is now much more emphasis on the sort of value a distributor will bring. Whether this is through being a vital component to a manufacturers’ channel strategies, or having deep market insights especially in the lesser connected Indian states, more is being demanded of distributors, as well as logistics service providers. How-

ever, a number of factors are transforming India’s supply chain ecosystem, including the introduction of the GST and a real drive from Indian states and government entities to increase efficiency across the country. For example, the Delhi-Mumbai Industrial Corridor and Development Corporation (DMICDC) has awarded companies over US\$2.3 billion in contracts for the development of multimodal logistics hubs in Maharashtra, Gujarat and near New Delhi. Moreover, Modi’s 2018 budget saw the highest fiscal allocation for infrastructure spend -including plans to improve connectivity through road, rail, and inland waterways - at about US\$95 billion. “The government of India has made digitization of the country’s economy a number one priority,” highlighted R. G Panicker, CEO at Dangerous

Goods Management India, when discussing how India’s supply chain network was evolving. “The idea is to reduce bureaucracy, red tape, corruption and improve the speed of transaction and authentication. For a long time, Indian customs has been in the forefront in the drive to digitize the custom process. Today, almost everything is online and speed of clearance has gone up tremendously.”

Understanding India’s complex supply chain was once a daunting prospect for both domestic and international companies. Now, with greater participation from private companies, increased government spending and the transformation of India’s digital infrastructure, India’s supply chain ecosystem is becoming more consolidated and streamline. ■

R. G Panicker

CEO

**DANGEROUS GOODS
MANAGEMENT INDIA**

What are the benefits for a multinational company to outsourcing their logistics operations in India?

A company entering the Indian market needs the expertise of a logistics player accustomed to the local environment. Due to issues surrounding compliance and regulation, chemical companies are reluctant to utilize logistics providers’ services on a fully outsourced model, and many companies have their own warehousing and supply chain operations. However, many multinational companies find compliancy challenging in India due to a number of issues, including lack of guidelines or regulation regarding storage and handling of dangerous goods; certified hazardous cargo zones; substantial regulations for each and every product group; and finally the archaic Road Transport regulation. With respect to the transportation of dangerous goods, each truck and every driver need to be certified for each class of chemical being transported. A greater problem arises in that trucks may be carrying different chemicals on each return journey. Furthermore, the rules were made under the assumption that a single product was moving in bulk, but often you have a

large number of small package shipments of varying classes of dangerous goods, which cannot be carried in same truck. The rules are very specific and bureaucratic, often leading to non-compliant behaviour from companies.

How is Industry 4.0 impacting India’s supply chain network?

The government has made digitization of India’s economy a top priority to reduce bureaucracy, red tape and corruption, as well as to improve the speed of transaction and authentication. Indian customs has been at the forefront of the drive to digitize the custom process, and today largely everything is online. Speed of clearance has gone up tremendously. The common Goods and Service Tax (GST) which India adopted has led to a single taxation system in the country. In the long run, the GST will eliminate almost all paperwork requirements, increasing use of digital signatures for authentication. These developments and reduction in the cost of computing, especially through the storage of data, has motivated the logistical service provider to use IT platforms to be better connected to their customers and partners. ■





Moving Forward

"We are fairly bullish on the Indian market. The potential for growth is definitely there and given the end-market size & growth, staying away from India is not going to be an option for most companies."

- Anshuman Maheshwary,
Partner,
A.T Kearney

The Future of India's Chemical Industry

India's chemicals sector is at an exciting period of development. Although there is great potential in what is soon to become the world's most populated country, questions still need to be answered. In a country as vast as India, creating a thriving collaborative ecosystem, such as Singapore's Jurong Island or Houston, USA, will be challenging. However, if the PCPIRs can be supported by a strong foundation and a reliable anchor tenant, a major hurdle will have been cleared. Development remains in its infancy but learning from other jurisdictions will be pivotal to quick and efficient progress. Sudhir Shenoy, CEO of Dow India, echoed this: "We do not want to repeat mistakes, because it is an industry that has its challenges with respect to the environment, health and safety. We want to learn from other geographies that are perhaps ahead of us and learn from their mistakes." Opportunity is the first word that springs to mind when exploring India's chemical industry. At every point across the industry's supply chain, there is an opportunity to create value and, if due diligence is carefully planned, there is great potential to add value to India's fast-growing chemical industry. Given the market size and its speed of growth, and how untapped multiple segments of the industry remain, staying away from India is not going to be an option for any leading international company. ■



We are fairly bullish on the Indian market. The potential for growth is definitely there and given the end-market size and growth, staying away from India is not going to be an option for most companies. Also, increased domestic manufacturing is very much on the cards. However, not all companies will be able to gain. There are additional skill sets and capabilities that need to be acquired, such as how one goes to market, how one ensures feedstock security, how one deploys digitally, how one ensure cost competitiveness and establishes a greater footprint rather than being dependent on a single specific market. These factors will define the winners for whom awaits a significant financial success."



**- Anshuman Maheshwary,
Partner,
A.T Kearney**





"India is a developing country with large investments and a drive to be self-sufficient. The increasing demand and the exponential increase in the per capita consumption is only widening the demand-supply gap which warrants the large investment roadmap. The chemicals & petrochemicals sector is one such key area where investments are ongoing to reduce the import dependency."

**- Shekhar Balvalli,
Senior Vice President –
Country Management-Onshore Business,
TechnipFMC India**



"Performance products is a key driver for innovation. There is a demand for good quality products which do not have a negative impact on the environment. Gradually, there will be a shift towards having more eco-friendly, biodegradable and sustainable products. The new demand for products will be driven from two angles – from a performance point of view and from a sustainability point of view."

**- Vijay Bhatia,
Director,
Ava Chemicals**

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"One of the advantages of working in India is that the lower cost of wages translates into both lower capex and opex. India also has the advantage of a large workforce of STEM graduates. Additionally, the employee cost for Indian specialty chemicals and manufacturing as a percentage of total sales is roughly 6% to 7% whereas in Europe, the employee cost as a percentage of total sales may be closer to 15%. However, we will need to enhance our productivity to global levels, and technology and R&D to the global standards."

**- Paul Vincent Menacherry,
Managing Director,
Anthea Aromatics**



"We strongly advocate for companies to take action and not wait for regulatory forces to do so. For example, we champion Responsible Care and even mentor other companies on the initiative. We do not believe that safety or sustainability should be a differentiable advantage and do not want to hide behind and say we are better than others. We want to raise the bar and help others to follow and improve so that the industry can move forward as a whole."

**- Sudhir Shenoy,
CEO,
Dow Chemical International (Dow India)**

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