

\$2,500

the cheapest in
the world

21%

more space



DRIVING 'Nano' Technology



20 km
for every litre of
petrol

Euro 4
emission norms and a
pass rating on
crash test

The successful launch of the Nano by Tata Motors is spearheading India's drive for product innovation, design and manufacturing excellence in a wide range of industries, says **Annamma Oommen.**

INNOVATION is the buzzword in Indian industry today, as manufacturers and service providers strive to come out with unique, high-quality and cost-effective products and services, tailored both for the domestic and international markets.

A raft of international mergers and acquisitions (M&As) executed by Indian companies, especially in pharmaceuticals, steel, food and beverages, auto components and other non-IT related sectors of late, has brought the global spotlight on the country, its entrepreneurs and their inherent innovativeness.

India now seems to be heading forward on the indigenous path of designing and manufacturing world-class products. The latest fillip to Indian manufacturing has been the launch of Tata's much awaited \$2,500 small car, the Nano. Competitors had been sceptical of Ratan Tata's vision, questioning everything from the commercial viability to safety, quality and emission standards of the Nano. But the launch of the Nano at the Auto Expo in Delhi has made the detractors do a re-think on how it can change the automotive landscape in India.

The \$2,500 car, the cheapest in the world, looked every inch just that – a full-

fledged car. While commercial launch is still six to eight months away, the stated performance standard of 20 km for every litre of petrol, combined with its Euro 4 emission norms and a pass rating on crash tests means that the Nano is set to revolutionise travel for many an Indian family.

Says John Parker, executive vice-president, Ford Motors: "It is a groundbreaking product. The Nano will cause people to think differently about the car. I have a lot of respect for Tata."

The launch of the Nano has catapulted the Indian automotive industry into an altogether new orbit. "The Nano is not just a product of labour arbitrage or monopoly access to a low cost resource," explains Ravi Kant, managing director, Tata Motors. "What is different about the Nano is that it is a fruition of vision, radical thought processes, out-of-the-box thinking, innovative product design and engineering, project execution skills, and a new business model all driven by top quality management skills – qualities which successful Western (and Japanese) companies have predicated their superiority upon, qualities which the typical outsourced projects do not entail."

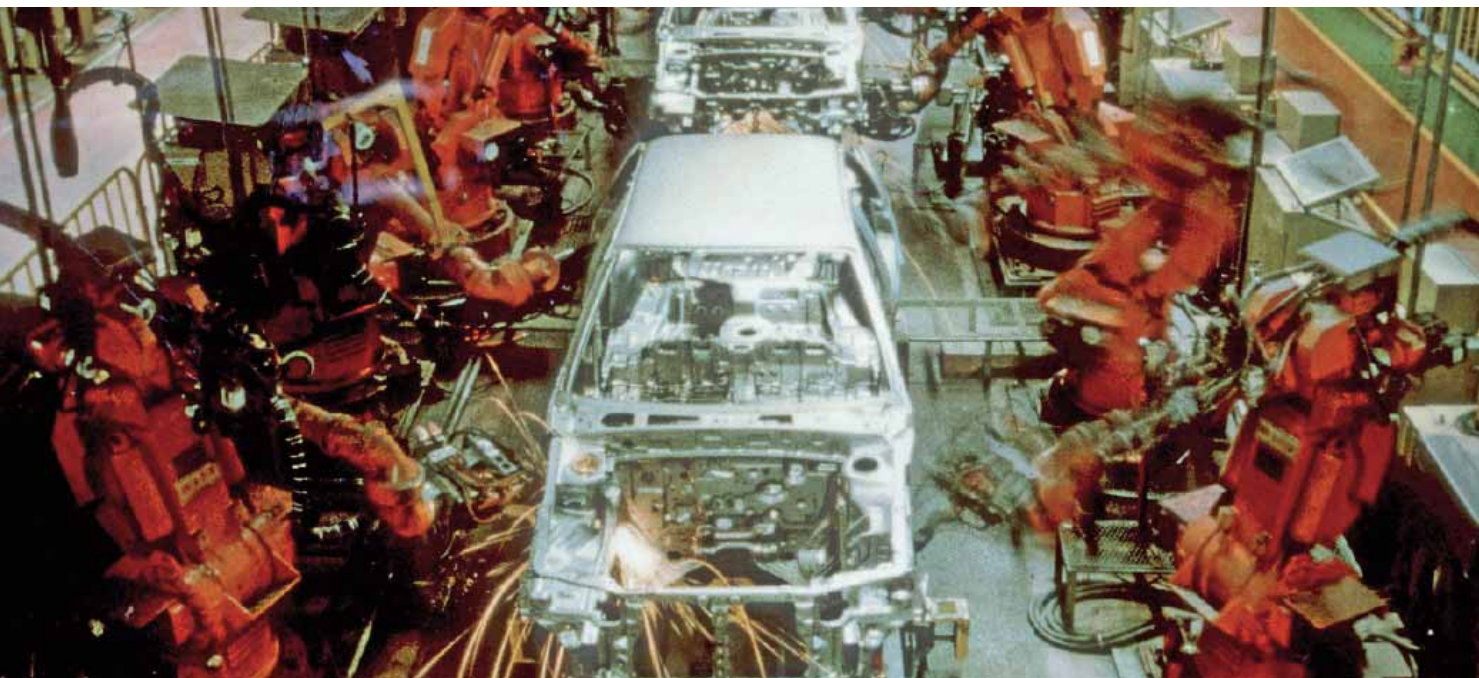
Tata Motors has, in fact, taken on

\$2,500

cost of the car, the
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world.

20 km

for every litre of petrol.



DPA

CHANGING VALUE EQUATIONS: Innovation will be crucial for future success in – and for – India

several global auto giants in their own field of expertise - the making of small cars. Global majors like Nissan and Renault are now evaluating the feasibility of a sub-\$3,000 car in likely collaboration with Indian partners. Bajaj Auto, the two-wheeler major, has also revealed a prototype of its own small car at the recently concluded Delhi Auto Expo.

As renowned management guru, C K Prahalad puts it, there is a "Fortune at the bottom of the pyramid", but it seems that it will be companies from emerging countries like India that will teach the world how to exploit this fortune. Most companies in the western world have traditionally targeted the affluent 600-800 million consumers of the world (out of the six billion global population) – mainly in the US and Western Europe.

However, with the momentum in the global economy shifting to BRIC (Brazil, Russia, India, China) countries, addressing the needs of almost one-third of humanity requires solutions that are radically different from what established global companies are used to.

Prahalad believes that the Nano represents an important inflection point in the global auto industry because Tata Motors has introduced the global auto industry to a whole new consumer segment. While consumerism might be stagnant or waning in the West, its growth in the emerging economies will be a major driver of the global economy in the near future. However, the rules of the game are different and established global players will have to adapt and re-learn the rules in order to capitalise on these opportunities as the approach to winning the fortune at the bottom of the pyramid is radically different from addressing the tip of the iceberg, as Tata has shown.

The value equation will change drastically, but Prahalad feels that innovation will be crucial for future success in – and for – India. He feels that it is the ability to work within external and self-imposed constraints to produce something revolutionary, which will be the key to success.

For example, some of the constraints involved in Nano's production include an unimaginable price benchmark, the ability to produce large volume/scalability to make this low margin product profitable, yet making it desirable and aspira-



INNOVATION CENTRES: A host of multinational companies are setting up research and development centres in India

tional while being resource efficient. These were the self-imposed constraint boundaries that the Tatas dealt with – what Prahalad calls the innovation sandbox.

Working within these constraints and producing a path-breaking product is what makes innovation of the Tata engineering team laudable. There is no doubt that this innovative product is the sum total of a large number of smaller innovations, whether it be completely new manufacturing material and adhesives or a unique business model that foresees not fully built cars but CKD/SKD (completely/semi knocked down) kits being shipped to dealers and put together there, not to mention the 37-plus (and counting) patents filed by Tata Motors during the manufacturing process of the car. The company has indeed turned around the constraints associated with it being from an emerging economy in its favour.

Looking at the larger picture, management thinkers will tell you that few economies or companies for that matter, can become path-breaking innovators without progressing through the "value" part of the learning curve. So, is the Nano a one-off case? Did India jump to the "innovation and design" stage without going through the "value" part of the progression spectrum? Actually the progression

An innovative product is the sum total of a number of smaller innovations, whether it be new material or a unique business model.



GLOBAL QUALITY PRODUCTS: The quality gap between products made in India and the US has narrowed significantly

\$2 billion

investment lined by Suzuki Motor Corp. in India.

200,000

cars to be exported by Suzuki from India by 2010.

has been a gradual, but low profile one, until the Nano forced us to examine the evolutionary process.

Discerning market watchers had realised that India had moved up the value chain over the last five years or so. For example, India has evolved from a domestic market for small cars into the global hub for small car manufacture. In a J.D. Power survey conducted in the last quarter of 2006, it was found that the quality gap between cars produced in India and the US had narrowed to insignificant levels.

This means that international manufacturers have graduated to producing global quality products in India even for the domestic market. This would never have happened without the presence of requisite technology and skill levels.

Hyundai's commitment to India is reiterated by Heung Soo Lheem, ceo, India operations: "We have a very clear target. India will be our export hub, which means all our small cars will be produced

here," he says. Similarly, Osamu Suzuki, chairman of Suzuki Motor Corp, says his company is investing \$2 billion in India and plans to export 200,000 cars from here by 2010. Ford too has its own facility at Tamil Nadu, while Citroen, Renault and Nissan are also finalising plans to assemble cars in India.

Honda plans to triple its car sales to 150,000 by 2010, and is in talks to build a second plant near New Delhi, while Toyota and Daihatsu will invest \$86 million in a Bangalore plant to build 100,000 cars annually, ramping up to 200,000 by 2010. General Motors has decided to spend \$300 million for a second plant that would raise its Indian capacity to 140,000 cars a year, from 60,000, while Volkswagen and BMW are building their first factories in India, even as Volkswagen's sister company Skoda already has a plant in Aurangabad.

"India's proximity to other booming economies in Asia as well as other emerging markets like Africa gives it an

advantage," says V.G. Ramakrishnan, director of automotive practices at Frost & Sullivan. "And shipping to Europe from India can be less expensive than that from Brazil, Thailand or South Korea."

It is not just large scale manufacturing abilities that these companies are focusing on. Innovation and design work too seem to be a major factor driving the decision of several multinationals to Indianise global operations. Maruti Suzuki has done some design work in India; others like General Motors, DaimlerChrysler, Hyundai, Fiat and Ford, are considering or have set up R&D facilities here. GM India's R&D hub here will conduct exploratory research in maths-based tools, vehicle development and automotive electronics. Says Rajiv Bajaj, managing director, Bajaj Auto, the country's second largest two-wheeler maker: "India is an emerging market in Asia and it is essential for us to grow our R&D capability as part of the overall expansion of our presence in the region."

With India becoming its global export hub for small cars, Hyundai Motors India is beefing up its R&D centre. India's design-to-manufacturing skills are further highlighted by Tata's Indica car project, which – from paper to production – cost under \$300 million, whereas it would have cost five times more in a developed economy.

DaimlerChrysler set up its R&D facility here in 1996, hiring Indian techies for high-end research to develop software for its super luxury cars. Says Abdul Majeed, partner, PricewaterhouseCoopers: "India's scientific talent allows its companies to locally design and procure some of the more expensive aspects of auto parts manufacturing."

The Boston Consulting Group (BCG) estimates that such process engineering can cut capital costs of auto component plants by 40-60 per cent. In auto parts manufacturing, Bharat Forge's high-skill, high-tech production standards allow it to boast of a roster of A-list clients like Toyota, Ford and DaimlerChrysler. While most auto parts exported from India were initially quite basic, Toyota has begun shipping transmission equipment from its plant near Bangalore.

India's new found "innovation/R&D position" is echoed in several other sectors. Across industries, a host of MNCs have



RATAN TATA: The Nano represents an important inflection point in the global auto industry

set up or are setting up R&D/innovation centres in India to take advantage of its highly trained workforce. GE, Texas Instruments, Symantec, IBM, Lenovo, Oracle, Microsoft, Cypress Semiconductors, Sun Microsystems, Freescale, SpikeSource, Lockheed Martin (with Wipro), Philips, LG, Motorola, ABB, Schneider Electric, Honeywell, Siemens and Nokia have established innovation and design centres in India.

Other big names include Ranbaxy-GSK, Johnson & Johnson, Eli Lilly, Allergan, Eisai Pharma, Dupont, Bristol-Myers Squibb, Pliva, Ratiopharm, Nektar Therapeutics, Sigma Aldrich and Teva in pharmaceuticals; Degussa, Rohm and Haas in specialty chemicals, and Cummins, DaimlerChrysler and Toyota in auto components and engineering.

A small but growing contribution of the Indian subsidiaries of MNCs – coupled with those by many home-grown firms – in product innovation, design and manufacturing enhances the mutually beneficial relationship between India's well-educated workforce and global corporations. 🌍

India's proximity to other booming economies in Asia as well as other emerging markets like Africa gives it an advantage.