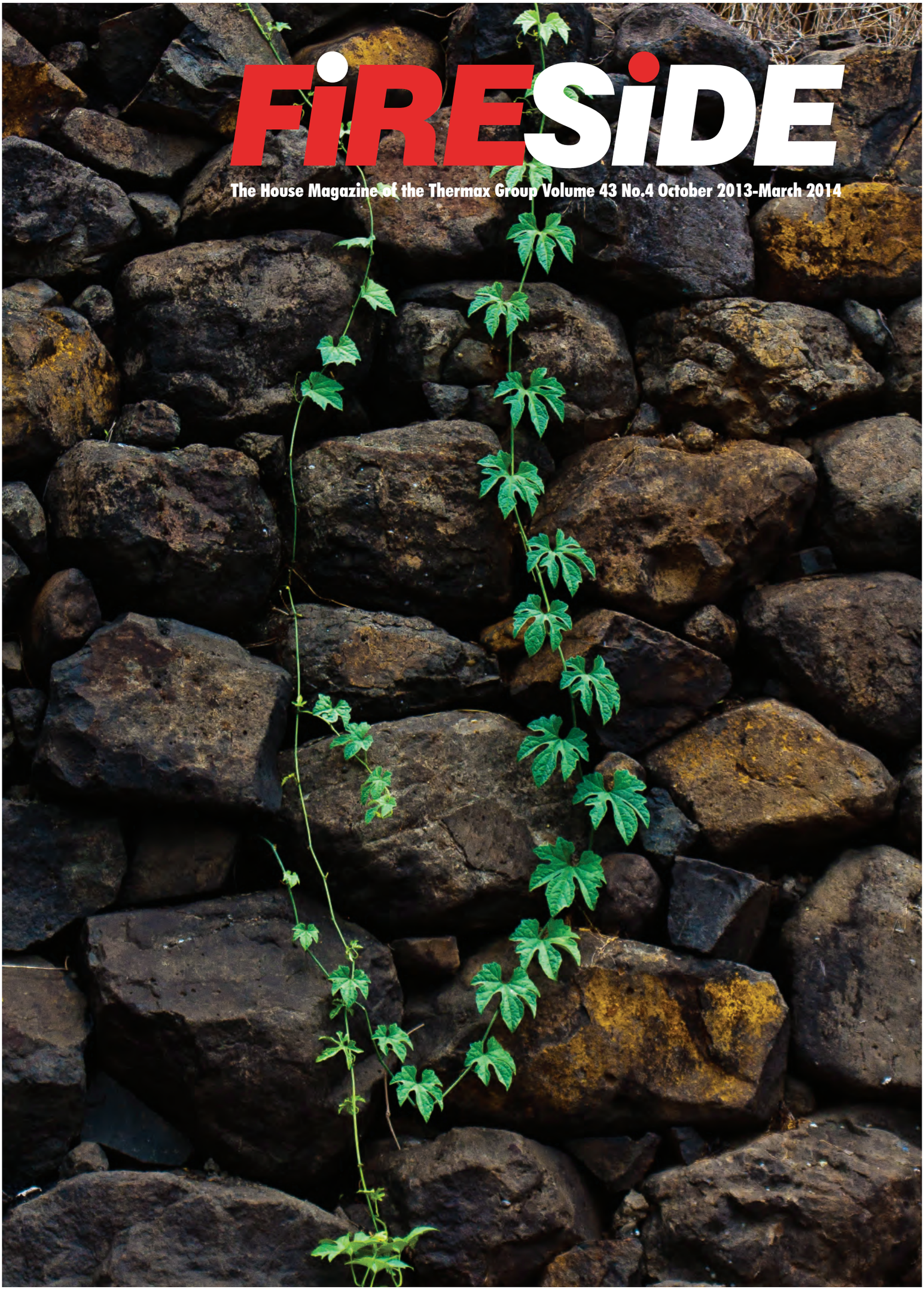

FiRESiDE

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FIRESIDE

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THERMAX

Editor
A.M. Roshan

Assistant Editor
Natasha Rodricks-Naidu

Design
Shashi Karmarkar

Production & Circulation
Vilas Bade

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Cover

The grey, blue- black and yellow tones of the rocks offset by the happy green of the leaves. The stern immobility of the stones form an unexpected backdrop for the airy lightness of the creeper.

In the clash of textures too, it is a study in contrasts : the fragile creeper rests against the rough grain feel of the rocks, and one can almost imagine the moistness of water seeping over the stones.

Photo by Sameer Karmarkar

BACK COVER

Thermax Enviro's new facility for air pollution control systems

Comment

"Our world will not die as the result of the bomb... it will die of laughter, of banality, or making a joke of everything, and a lousy joke at that."

– Carlos Ruiz Zafón

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Correspondents : J. Natesan Heating Farhan Kauchali Cooling Prasanna Hiwase Services Noorjahan Khan B&H Vivek Taneja Power Varsha Patekar Enviro Abinash Patro WWS Veena Coutinho Chemical N.Haridas TECC Kavita Naidu HR Sneha Patil IR S. Chandak Administration Aditi Vakil BTG Jenny Alexander Finance Asmita Kshirsagar RTIC Saheblal Shaikh Corporate Safety Kirti Pitale Mumbai Rama Subramanian Delhi Swati Aditya Kolkatta Lakshmi Gupta Chennai Ami Patel Savli

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Fireside is also hosted on the website : www.thermaxindia.com Email : roshan@thermaxindia.com ☐ natasha.naidu@thermaxindia.com

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Gildan shifts to green energy with Thermax systems

Gildan's Luis Asfura, flanked by Thermax's Judah Cohen and Shrikant Wale (right) at the India facility ; in the background, one of the chillers for Honduras

WHAT'S NEW ?

Gildan, a textile major in Honduras relies on Thermax's global facilities in India, China and Denmark to run its production on green energy. Recently, the company which owns and operates large-scale manufacturing facilities in Central America and the Caribbean basin, placed an order with Thermax for 15 absorption chillers. By offering 7300 TR out of a total installed cooling capacity of 11,000 TR, the steam driven double effect chillers will help Gildan replace a substantial share of power-intensive electrical cooling in its production area.

The steam to activate the chillers is generated by biomass based-boilers, several of them supplied by Danstoker, Thermax's group company. These boilers are part of a large biomass facility that Gildan constructed for its planned shift to non-fossil fuels and provide steam for three textile facilities in Honduras.

For Thermax Cooling, in terms of the number of chillers in a single contract, the Gildan order is the biggest. Thermax is using its manufacturing plants in India and China to meet Gildan's deadline. From both locations, the chillers will be shipped by mid-March to Honduras.

Maxi Anand and Dinesh Badgandi at Gildan's Honduras unit, with a Danstoker boiler as the backdrop

Easy to install water treatment at remote sites

Thermax has introduced containerised water treatment and purification plants, ideal for hot, humid and dusty industrial sites. The containers save clients, the complexity and hassles of constructing buildings to house such systems.

The Water and Waste Solutions (WWS) business of the company has already shipped out two such containers to a cement plant in Rajastan. After a brief training session, commissioned workers are producing high-quality potable water within days of delivery.

At the site, borewell water with high dissolved solids is treated by an ultrafiltration (UF) system of 106,000 litres per hour, and a reverse osmosis (RO) plant of 20,000 litres per hour capacity and sent to the cement plant processes. Partially treated water is further cleaned by another RO plant (95,000 litres per hour) in the second container for use in the cement unit's captive power plant.

Inside view of the container : high quality potable water

The compact plants are installed in refurbished and air-conditioned 40 feet shipping containers made of stainless steel. They comprise UF membranes, RO pressure tubes and pumps, pressure control devices and transmitters. The ultrafiltration and reverse osmosis systems are linked by PLC to run individually or in tandem.

The system is easy to install as except for the container foundation, there is only limited civil work. The compact model helps quick mobilisation and demobilisation. Says Vishal Mehra, "The containerised model is useful for remote locations, oil fields, power and chemical industries, mining and construction sites."

Thermax team with the container ready for despatch : ideal for industrial sites

Power from turbine waste heat: Thermax equipment in refinery

A Thermax HRSG installation in Europe : power from waste heat

Thermax is supplying three heat recovery steam generators (HRSGs) to support the expansion plans of a leading refinery. Each HRSG will generate 275 TPH high pressure steam and 30 TPH low pressure steam for captive steam and for process requirements.

The major share of steam will be generated from the waste heat of the three gas turbines (GE frame 9E) and also by supplementary firing of the Syn gas from the refinery. As it is going to be the first time that a lean gas (of comparatively lower combustion value) like Syn will be fired in an HRSG, the burner system is designed to fire both Syn and natural gas in various proportions.

The HRSGs will be commissioned by mid-2015.

A biomass-based power plant built earlier by Thermax for Bataan in the Philippines : repeat orders

Thermax to construct a 15 MW power plant in Philippines

Thermax has begun work on building an Independent Power Plant in the Philippines.

Lamsan Power Inc. awarded the contract for the 15 MW biomass based power plant at Maguindanao in the Cotabato Region.

The project is coming up under the Feed-in- Tariff scheme offered by the Filipino Government to encourage green energy projects.

This is a repeat order from Lamsan and the 5th plant that Thermax is constructing

in the Philippines. Earlier, in 2009-10, Thermax's Power Division had built and commissioned for the group, a 3.5 MW co-generation plant and also managed its O&M. The plant performance and maintenance support impressed Lamsan, eventually resulting in the new order.

The upcoming plant will have a rugged travelling grate boiler to handle a variety of biomass fuels and multiple fuel conveying capability. The scope of supply also includes water treatment system and electrostatic precipitators for emission control.

Thermax bags contract for O&M in Asia's biggest solar thermal power plant

Thermax O&M team in action : reliable power

Thermax has won the contract for operating and maintaining the 125 MW capacity solar thermal power plant, put up by Areva Solar India for Reliance Power. The contract, valid for five years would see Power Division's O&M Group managing the installation, billed as Asia's biggest solar thermal plant, coming up near Pokhran in Rajastan.

Earlier, for the project Thermax had carried out balance of turbine islanding (BOTI) job which involved testing and commissioning of turbines and their auxiliaries.

Thermax will supply manpower, chemicals and consumables. For the Thermax team, the site presents a new set of challenges. The plant, unlike traditional power plants, will run only during the day and there will be frequent starts and stops. In place of conventional boilers, here mirrors and solar steam generators produce supersaturated steam to turn the turbines. The project uses the patented mirror technology of Areva – Concentrated Linear Fresner Reflectors (CLFR) – which requires the team to maintain an extensive cleaning regimen for the mirrors.

Thermax team earlier installing the steam turbine at the site : new challenges

As compulsive consumers, are we using and hoarding much more than we really need, is a question we need to answer for ourselves.

I have just completed a very thought provoking book, *The Third Curve,* written by Mansoor Khan, who studied at IIT Mumbai, Cornell University and MIT Boston. It highlights the strong correlation between man's compulsive need for compounded growth and the limitations set by nature – a connection that we seldom think about.

The book throws light on man's near total dependence on 'oil' – a liquid fuel that is used in so many applications and around which much of today's technology is structured. We normally think of oil as yet another fossil fuel, but it is unlike any of them. Apparently two-thirds of each barrel of oil (about 42 gallons), in the form of petrol, diesel and aviation fuel, is used for transportation and machinery to "run" our modern industrial world. The balance one-third is used for making byproducts such as plastics, insulators, bitumen and fertilisers which "build" our modern day world. Khan explains the interdependence of oil and its byproducts. For example, in a simple ball point pen, the plastic is made from oil; the non plastic parts are extracted using oil based machinery; transported using oil, to factories made with machines that run on oil. The ink is made from solvents that are byproducts of coal and oil. He goes on to highlight how the world runs on oil, is built with oil and therefore at this point of time, it is irreplaceable!

He speaks of the good old 'Paradise times' when our needs were limited. Over time, not only has our population increased but our needs have turned to greed and an expectation of perpetual exponential quantitative growth. He describes it with two significant curves – first, the Concept Curve or the exponential growth curve that expects money to grow limitlessly – more the money, more we spend, more we produce and so on endlessly. But, we forget that one of the key inputs to perpetuate growth in our industrialised world is 'energy', which brings us to the Resource or Reality Curve. Unfortunately for advocates of limitless growth, this energy curve is finite and in fact, bell shaped. The earth does not give us resources based on our consumption.

The extraction rate of all natural resources including oil follows this bell shaped curve, which means that the peak of the curve is the half way point of depletion of that resource. From thereon, you can only get less. We have reached that half way point with oil.

The warnings from the Resource Curve is most relevant in the case of oil extraction, which follows a distinct bell shaped curve wherein the rate of production from a well increases upto the "peak" which is the half way point, when only half has been taken out, after which it only decreases. This concept of 'Peak Oil' challenges our idea of freely extracting oil from a huge underground tank.

According to Hubbert, the scientist who plotted the curve on oil extraction, US oil production peaked around 1971 and it happened with world oil production around 2005. Apparently more than 95% of all recoverable oil in the world has already been found. Let us also remember that we have 7 billion people on our planet, expected to touch 9 billion by 2050, if not earlier. If we continue to extract from our finite pool of resources, we will need several earths to sustain us.

India has a very low energy consumption per capita of only 700 kWh, as compared to the world average of 2500 kWh and as high as 15000 kWh in many developed countries. This is only plausible because a large proportion of our population is still very poor – in 2014 we still have 400 million people without electricity. The energy consumption score for our wealthy would possibly be as bad as that of the developed world.

In 1981, E.F. Schumacher, the famous economist wrote, "Modern man does not experience himself as a part of nature but as an outside force destined to dominate and conquer it. He even talks of a battle with nature, forgetting that, if he won

the battle, he would find himself on the losing side." And that's exactly what we see happening right before us.

Khan highlights that until the late 1960s, the money and oil curves ran fairly parallel, since our consumption and the need for energy were in sync; however as we moved into the early 70s, the two curves started moving apart, wherein man's plunder of earth's natural resources worsened the ecological balance.

Given this scenario, what can we do? As an organisation that offers systems and solutions in the energy and environment domain, there is a lot that we can. For a start, I believe that we must push forward our green agenda: use alternative forms of energy, convert waste to energy, help our customers with processes that consume less water and energy, recycle to reduce the intake of fresh water, manufacture more energy efficient products and environment-friendly chemicals, and so on. We can choose to wait for the government to bring in incentives so that customers use our products, or we can work smart to dramatically reduce costs.

Thermax's motto, *Conserve energy, Preserve the environment* says it all. Can we really practice this motto in our everyday lives? Vehicles account for maximum use of oil in our country. The best solution is a well planned mass public transport system that can bring down the number of private vehicles on the road. That may be dependent on the government, whom, as concerned citizens we can and should influence. However, in our everyday lives, we can always opt for car and bike pools, shared transport or, if available, using the company bus whenever possible.

Our children are sometimes our greatest conscience keepers. My daughter often reminds me to turn off the tap while I am brushing my teeth, or switch off lights in a room. These are very small gestures, but I firmly believe every little counts; small steps matter.

Going back to the book, Khan is of the view that quantitative measures such as enhancing efficiency or the switch to CFL light bulbs may not be sustainable solutions, since they do not tackle the root cause. He argues for a fundamental shift in the way we think and act, which is to rebuild the world on a different set of principles. It would mean moving from growth to a steady state, big and global to small and local, from competition to sharing and efficiency to resilience. He echoes Edward Abbey's succinct observation that "growth for the sake of growth is the ideology of the cancer cell." Powerful and wise thoughts. But what about the aspirations of millions, especially of those in the majority of the poorer countries of the world? Don't they need growth and therefore jobs and incomes to move up Maslow's Hierarchy of Needs?

Khan does highlight that quantitative measures are perhaps necessary, but not sufficient. In the name of advancements in technology, we can shift some of our electricity generation to renewables, but we can't eliminate the use of oil, which is fast depleting. The only way to extend the life of oil could be to reduce the obsession for consumption and substantially reduce wastage in society. As compulsive consumers, are we using and hoarding much more than we really need, is a question we need to answer for ourselves. It is only when we realise this, we will move towards what Khan describes as the Third Curve – the behavioral curve of the universe, which is desirable and sustainable, since it respects the limits of the earth – a movement towards a newer way of life, with a lower energy budget.

Something for each of us to ponder on.

Meher Pudumjee
Chairperson

EXPRESSIONS

As an organisation there is a lot that we can do. For a start, we must push forward our green agenda.

Creativity works better through data based

Anant Kshirsagar, Head of Manufacturing for the Heating business, in a chat with A.M. Roshan, talks about the ongoing programme of change that has made improvement sustainable.

UP CLOSE

Between 1987, when Anant Kshirsagar joined Thermax, and 2014, Thermax's manufacturing facilities expanded beyond India to China and eventually to Europe. As manufacturing head of the Heating group's facility in Chinchwad, the base on which Thermax's global factory superstructure arose, Anant has been both a witness to the changing times and also a participant-leader in moulding those changes.

After completing his mechanical engineering, Anant worked for six years (1981-87) with the Greaves Group, gaining industrial engineering experience at their Ruston & Hornsby factory. When he came to know that Thermax was looking for people with similar experience he changed jobs. He worked with Ramesh Kherdekar, Thermax's industrial engineering chief.

In 1989, two years after he joined Thermax, Anant was part of the group that carried out intensive industrial engineering studies that helped unveil 'Time Standards', the company's first methodical attempt to measure efficiency norms and link it to incentives. "Since then, we have been refining the standards and improving output from our factories," says Anant.

In the early 1990s, trying to keep pace with the expanding business, Thermax's manufacturing had to reduce lead time and improve throughput. In 1991 Anant moved to the Production Planning & Control function. Faced with defaulting customer deliveries, there was a relook at the mismatch between committed and actual times of delivery. He says it was a breakthrough to learn not to be content with neatly prepared plans. "The good plan that gets reviewed is the one which delivers." As ground reality changes, the importance of a daily management plan that accommodates revisions cannot be overestimated.

He worked with the order execution group in 1995. Besides integrating the requirements of the planning and commercial groups, the work here also underlined the need to evaluate and eliminate the unplanned time that gets added to customer delivery schedules. He understood how important it is to gather customer related information for efficient manufacturing processes. "The client situation – in terms of financial health and site readiness –plays a big role in the final despatch of the product."

I ask Anant about his take on manufacturing excellence. He talks about the five 'charges' that need to be integrated – safety, quality, delivery, cost and employee morale. In each of these aspects, the route to excellence can be mapped only through measurement. "Take safety, the moment you begin to measure it and demonstrate it at the work place you begin the journey towards a safer environment." The same approach, he points out, applies to Quality too. "If we capture instances of rework, big or small, take corrective steps to bring down that number and work for continuous improvement, we will get it right first time," he explains.

The move towards streamlined systems and processes may have taken a zigzag route. But Anant says good practices have certainly taken root. "The message of Kaizen is imbibed. We see it not just in ideas for improvement, but in their rigorous implementation and tangible results." He reminiscences about the TQM phase of 1993-95 and I raise the question frequently asked whenever we revisit those years – whether a process based approach stifles the human side of organisations. Anant doesn't hesitate before replying, "It is a misnomer to think that creativity is lost in process improvement. We have learned the hard way that creativity and intuition work better when they are channelised through data based management."

We move over to 2004 when Thermax, helped by Mckinsey, reviewed the entire value chain from order booking to

when channelised management'

commissioning of equipment at client sites. This was when Thermax initiated the 'one boiler a day' project. For this to happen, everything happening in the factory was expected to "work in tandem and create the kind of harmony that you get in an orchestra." The project, Anant says, has succeeded and Thermax has improved on the per day boiler output figure. On-time performance, has improved and cycle time has reduced. For example, a 4-ton boiler delivery used to take 120 to 135 days. Today, from placement of order to despatch it takes 90 days. Standard product delivery is now pegged at 75-90 days. "We are working to bring these down, further, in cases where the customer wishes so."

The ERP implementation in 2006-07 gave Anant, who was also a member of Thermax's transformation project, exposure to a range of business processes – from enquiry generation and order booking to commissioning at client sites.

In 2008, he took over as the manufacturing chief of the Heating SBU. Additional responsibilities of global sourcing and vendor development came his way in 2011. "Vendor development has been a hugely satisfying experience. We have created 34 supplier partners in a rigorous two-year time frame." He invests his time in global sourcing, a priority area for Thermax to cut down cost and improve the quality of components. In the meantime, with the acquisition of the European companies, he has a bigger role now in the global heating business. "We have taken a leaf from Danstoker and are now moving towards modularised and containerised boilers. This can ensure better maintenance at the customer's end." With the help of Danstoker, the Indian manufacturing team is also taking steps to give an aesthetic face-lift to its boilers.

I ask Anant about the changing profile of the manufacturing industry, where outsourcing is increasingly practised and there is a flux on the labour relations front. He says that the trend in forward looking companies is to keep "only the most valued operations within factory premises." He is confident that our Union, an ISO accredited outfit, understands what is desirable for the collective good of the company. "Many of our older workers have grown with us and we have a trust based relationship. This trust needs to be converted to action plans to ensure viability."

As we wrap up our conversation I ask him about the one change that he has observed in the course of his Thermax career. He says that earlier, improvement used to happen in pockets and mostly it used to be people centred or need based. "Today, our programme of change has integrated aspects of quality, cost, etc. so that the improvement process is now sustainable," Anant concludes.

"The good plan that gets reviewed is the one which delivers."

ROUND UP

Preferred **vendor agreement** signed **with Technip**

Thermax is now a preferred vendor of Technip, a world leader in project management, engineering and construction in the energy industry. An agreement signed by the two organisations for the partnership is part of Technip's initiative to develop a long term relationship with its key suppliers. The move is aimed to eliminate supply chain inefficiencies and achieve security of supply with sustained quality.

Thermax has, in the past, supplied floor mounted boilers, fired heaters, heat recovery steam generators and waste heat recovery boilers for Technip's projects in Abu Dhabi, Bahrain and Algeria. Says Pravin Karve, Executive VP, "Through this partnership, we hope to expand Thermax's current relationship with Technip to many more projects and markets."

Pravin Karve with the Technip officials : expanding relationship

Thermax bags Best Solar **CST Manufacturer Award** from MNRE

Thermax added another feather to its cap of solar achievements with an award from the Ministry of New and Renewable Energy (MNRE). The award recognised Thermax's achievements in the concentrated solar thermal (CST) area as the best performing manufacturer with the largest number of solar installations in the last three years.

Kiran Deshpande (Head, Solar Thermal Business) received the award from Dr. Farooq Abdullah, Union Minister at the 'National Workshop on Solar Thermal Systems' in December 2013. Dr. RR Sonde, Executive VP, addressed the august gathering at the event.

The event also saw two Thermax clients winning awards for best solar installation prizes. The 70 dish CST based system for cooling at Mahindra vehicle manufacturing plant won for best establishment; and SRM University, Chennai won for its solar steam cooking installation for 5000 people. Kiran Deshpande says, "In-house capabilities, R&D based market focus and system integration expertise have helped our solar thermal business grow."

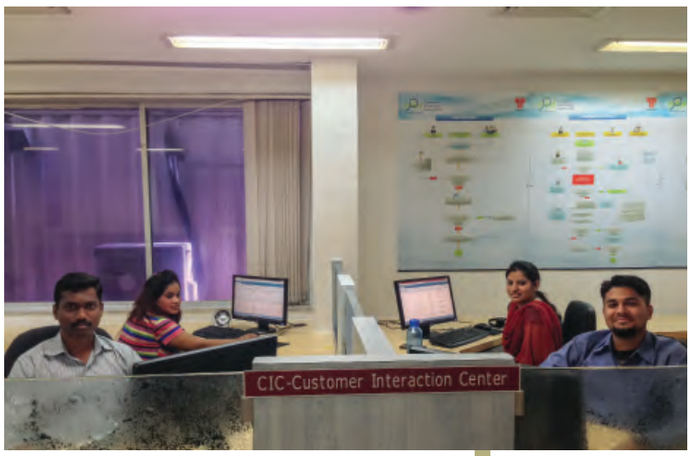
Kiran Deshpande receiving the Thermax Award : best performing manufacturer

Customer **Interaction** Centre **completes two years**

Thermax's Customer Interaction Centre (CIC) completed two successful years this January. The CIC was institutionalised as an offshoot of the company's Customer Focus project and helps it connect with customers. Operating from the company's Environment House, the team handles complaints, generates leads, and conducts surveys.

Assisted by Thermax's IT support team, CIC links customers to business division co-ordinators to address and resolve their concerns. Three windows connect the customer with CIC – an India toll free number (1800-209-0115), email through website (enquiry@thermaxindia. com) and registration through employees receiving customer calls or emails.

The CIC acknowledges each complaint or lead with a reference number. Complaints are addressed within a specific time span.



CIC team : connect with customers

It also gets in touch with various industry segments to understand specific requirements for Thermax products and applications. On behalf of business divisions, the CIC has conducted dipstick surveys to gauge Thermax's presence in various geographies. The Centre provides focused information on complaints and leads in a dashboard format for reviews.

The Centre has come in for praise from the business divisions of Thermax.

Jagdish Lomte is Thermax's **new CIO**

Jagdish Lomte has joined Thermax as Vice President and Chief Information Officer, and will head the company's Business Technology Group (BTG).

Jagdish brings with him 28 years of manufacturing Industry experience, mainly in the IT domain.

He began his career with Mahindra & Mahindra. After an initial tenure in manufacturing and industrial engineering functions, he moved on to handle Information technology in his 16 year career with Mahindra. He also worked with KEC International (RPG Group) as CIO, implementing new initiatives in both legacy and ERP areas of IT. His work won him several awards at RPG.

Prior to joining Thermax, Jagdish had been with Walchandnagar Industries. As CIO, he developed and implemented an IT Strategy for their heavy engineering processes.

Jagdish is a Mechanical Engineer from Govt. College of Engineering, Karad and has an Advanced Diploma in Computer Software, Systems Analysis and Applications.

Jagdish and his wife Anuja have two children – Chaitanya and Chaitrali.

Fireside welcomes Jagdish and wishes him a mutually rewarding association with Thermax.

Thermax WWS team with the J&K officials : improving on conventional processes

Space saving **sewage treatment technology** for **J&K lakes** and waterways

Thermax recently constructed a 16.1 MLD sewage treatment plant (STP) at Brari Numbal for Jammu & Kashmir Lakes and Waterways Development Authority. The plant was inaugurated on 5th December 2013.

Catering to a 273 hectare catchment area, the installation incorporates advanced sequential batch reactor (SBR) technology. It is a significant improvement on the conventional activated sludge process (ASP) that needs large tanks and long retention time to degrade the waste. Though a proven alternative, ASP requires almost ten times more space than what the new installation has used. With renewed focus on reducing nutrients in the wastewater, SBR based sewage treatment plants with very nominal chlorination is a more effective and cost effective technology.

As an active partner in the project to clean up the Dal Lake, Thermax has been operating and maintaining STPs in Srinagar – in Hazratbal, Laam and Habak.

Apurva Purohit at the opening session of* Sakhi *: empowering women

New **opportunities for learning** and **teaching**

The Learning & Development (L&D) team from Thermax HR has come up with three interesting initiatives.

The *Leaders Teach* series taps into the experience and wisdom of senior leaders. At the first of the sessions, a packed audience at EERC listened to Unny speak on 'Leading Business in Turbulent Times'.

Teach a class encourages employees to interact with their colleagues through focused sessions on various topics of their interest and expertise. Thermax's employee-teachers conducted classes on environment protection, yoga, CAD customisation in Solidworks, photography and painting.

Sakhi aims to support and empower women employees. At the launch of this initiative, Apurva Purohit, CEO of 91.1 Radio FM offered practical insights into managing successful careers, homes and relationships. At the end of the session, interacting with participants over high tea, Apurva also autographed copies of her recently released book, *Lady, You are not a Man.*

Shirwal manufacturing facility greets Jim Ferland

At one of the plants of TBWES : (from left) Deepak, Jim, Meher, Jenny, Pheroz, Unny and Paul

Jim Ferland, President and CEO of The Babcock & Wilcox Company, visited the new manufacturing plant of the joint venture, Thermax Babcock & Wilcox Energy Solutions (TBWES) in January 2014. On his first visit to India on the invitation of Unny and Meher, Jim was accompanied by Jenny Apker, Vice President (Treasurer and Investor Relations), B&W and Paul Schavuzzo, Vice President and General Manager, Global Power Division, B&W PGG.

The visit began with the mandatory safety induction drill at the plant. Deepak Chopra, CEO of TBWES updated the visitors and the Thermax team about the efforts invested in making the facility truly world class.

The TBWES facility spread over 100 acres at Shirwal, near Satara in Maharashtra has a capacity of 3000 MW and can manufacture supercritical boilers. Impressed by the state-of-the-art machinery installed at the three plants, Jim remarked that the facility probably was the most advanced one that both the parent companies had, and he expected it to be utilised by both.

In the depressed power business context of the country, though the plant is awaiting its first order, both the JV partners are optimistic about the prospects. "Once we book an order we shall celebrate success together," was Jim's parting comment.

Diwali cheer among children at the Charumathi childcare centre

Providing a good time for children : goodwill gesture

At the Charumathi childcare centre in Andhra's Golconda district, 77 HIV infected children had a memorable Diwali. Sweets, crackers and freshly cooked food cheered them up and brought smiles to many faces.

The goodwill gesture came from the subsidiary, Thermax Instrumentation Ltd (TIL) and was supported by the sub contractors, vendors and the client, India Cements Ltd (ICL), for whom the company is managing a project site at Golkonda. TIL raised Rs. 60,000 to buy food items, sweets and also plywood to make ten dining tables for the Centre. ICL, donated playground equipment. "It was good to see the children enjoy a special lunch and celebrate Diwali like other kids," says Diwakran from the Golkonda project site.

Fun fair at R.D. Aga Centre

Like every year, R.D. Aga Community Centre organised a memorable event to bid adieu to 2013 and ring in the new year. Thermax employees accompanied by spouses, children and relatives had a good time at the Fun Fair organised by the Centre at the combined Christmas and New Year celebrations on 22nd December 2013.

Santa visited RDACC along with Chota Bheem and friends. The visitors enjoyed a jugglery show, interactive games and piping hot snacks. The kids enjoyed playing inside the water ball.

The highlight of the evening was the dances put up by the children of employees who had attended Bollywood dance classes organised by RDACC.

Young scholars felicitated

At a felicitation ceremony for meritorious students of Standards 10 and 12 from Thermax families, 26 young scholars acknowledged and appreciated the help from their parents, siblings and teachers. One of them thanked her younger brother for regularly making coffee to keep her awake during her studies.

Fireside congratulates all the students who appeared for the exams and wishes them the best in their academic and career pursuits.

Students and their families : congratulations

Dowtherm Vaporisers at Silvassa

Thermax installation : Dowtherm vaporisers

Thermax commissioned four Dowtherm Vaporisers in November 2013 at the Reliance petrochemical complex in Silvassa.

The oil and gas SBU team from Boiler & Heater had worked on design, supply and construction of these vaporisers, each of 12 MMkCal/hour. The project was commissioned in the stipulated time frame of 15 months by the Thermax team.

Thermax's boilers for beet sugar plant in Alexandria

Alexandria Sugar and Thermax teams : presence in Egypt

Thermax has supplied two 80 TPH boilers for Alexandria Sugar, a group company of Savola in Egypt. The boilers using multiple fuels – natural gas, diesel and biogas – will provide steam at the beet sugar plant in Egypt.

Desmet was the consultant for the project.

The boilers are designed to cater to the plant's frequent load fluctuations while producing beet sugar.

The trial run of both boilers have been completed and are awaiting plant load for the performance guarantee test by March 2014.

Teacher training gets a 'lift' from the Thermax Foundation

Thermax Social Initiative Foundation (TSIF) along with Pune Municipal Corporation (PMC) launched an in-service training programme, for municipal school teachers and teachers from a few under-resourced schools. Formally named 'Leadership Institute for Teachers' (LIFT), the initiative originated from the Foundation's learning from running municipal schools in recent years – to improve the quality of education, it is essential to enhance the quality of teachers.

The 17- day PMC - TSIF Teacher Training Programme spread over the year was launched on 12th June 2013. 63 teachers from 30 municipal schools and 10 teachers from four low income private schools participated to upgrade their skills. The overall aim of the programme is to improve the English reading fluency of children and the overall classroom culture. For this, the

Training session in progress : making teachers life-long learners

programme equips the teachers with relevant pedagogical skills. "Our teachers will be able to inspire a love of learning in the next generation, only if they sustain their love for learning. The structured sessions of this programme help the participants to be life-long learners," says Chaitra of TSIF.

Next academic year, LIFT will be training 68 teachers from municipal English medium schools. TSIF would like the programme to evolve into a high quality pre-service and in-service training that will bring the transformational change in teacher's preparation.

Soham

Gold Medal for Soham

In the All India Open Karate Championship held in Delhi, Soham bagged a gold medal in the sub-junior category. This is the 3rd consecutive gold he has won in the past six months in martial arts. A brown belt holder, 10 year old Soham has been practising karate for the last 6 years.

Soham, a 5th standard student of American Public School, Gurgaon is the son of Pramendra and Reshma Mehrotra from Thermax's Delhi office (Admn &Commercial). He loves to dance and play chess.

(From left) : Sujata, Shirish, Milind and Sibabrata

Chemical research article published in the international journal

A team from Chemical Division's biotech lab has published a research article in the international publication, *The Journal of Bioprocess Technology.* The article was on, 'Covalent immobilization of amyloglucosidase on Tulsion® weak base anionic resin: optimisation by Box-Behnken DOE followed by thermal characterisation.' Sibabrata Mukherjee, Milind Kulkarni, Sujata Kulkarni and Shirish Naik from Chemical division are the authors of this paper. The team also recently participated in the International Conference on Advances in Biotechnology and Bioinformatics in Pune.

Vijay

Vijay completes M.Tech. with distinction

Vijay Jadhav has completed M.Tech. with distinction in nanotechnology from Bharati Vidyapeeth, Pune. This course was in collaboration with the Joint School of Nanoscience and Nanoengineering, Greensboro, USA. During the course, he submitted his project paper on 'Calcium- silicate-hydrated gel's mechanical properties prediction and effect of additive on it via molecular dynamic simulation'.

Vijay, who joined Thermax in March 2003 works with B&H Services. He loves reading and watching science fiction movies.

Suneel, an avid marathon runner

Suneel

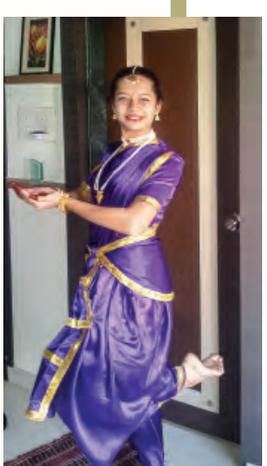
Suneel Hingwe, CFO at Thermax Inc., USA ran half marathon in the Detroit International Marathon in October 2013. He has been a participant here since the last five years.

Sunil had been an athlete in his student days and is also a stage actor. He and his wife Radhika are actively involved in Maharashtra Mandal of Detroit activities. He likes classical music, reading and photography.

All rounder, Rutuja

Thirteen year old Rutuja, a 7th Standard student at the Symbiosis Primary School has won the best all rounder award. The award was based on her overall performance in the school in academics, sports and arts over the seven years she has been at the school.

Rutuja, who is learning Bharatnatyam for the last 5 years is preparing for her Arangetram next year. She also actively participates in all the singing programmes in her school. Rutuja is the daughter of Aparna and Umesh Ranade from B&H Division. She loves music and playing badminton.



Rutuja

Rohan and Jayadev, certified PMP professionals

Jayadev

Rohan Umbranikar and Jayadev Bhattathiripad from Power division are now certified Power Management Professionals. The certificate is a global recognition by the Project Management Institute, USA, which deals with the best practices in the discipline.

Rohan

(In an earlier issue, we had named the photographs wrongly. The error is regretted and corrected, here)

before that big decision

In their new book, Decisive, *authors Chip and Dan Heath examine the biases and wishful thinking that lead us to take poor decisions and offer a guide to make better choices in life and work. Excerpts from the book:*

If you study the kinds of decisions people make and the outcomes of those decisions, you'll find that humanity does not have a particularly impressive track record.

Career choices, for instance, are often abandoned or regretted. An American Bar Association survey found that 44% of lawyers would recommend that a young person not pursue a career in law. A study of 20,000 executive searches found that 40% of senior-level hires "are pushed out, fail or quit within 18 months." More than half of teachers quit their jobs within four years.

Business decisions are frequently flawed. One study of corporate mergers and acquisitions – some of the highest-stakes decisions executives make– showed that 83% failed to create any value for shareholders. When another research team asked 2,207 executives to evaluate decisions in their organizations, 60% of the executives reported that bad decisions were about as frequent as good ones.

On the personal front we're not much better. People don't save enough for retirement, and when they do save, they consistently erode their own stock portfolios by buying high and

selling low. Young people start relationships with people who are bad for them. Middle-aged people let work interfere with their family lives. The elderly wonder why they didn't take more time to smell the roses when they were younger.

Why do we have such a hard time making good choices? In recent years, many fascinating books and articles have addressed this question, exploring the problems with our decision making. The biases. The irrationality. When it comes to making decisions, it's clear that our brains are flawed instruments. But less attention has been paid to another compelling question: Given that we're wired to act foolishly sometimes, how can we do better?

Sometimes we are given the advice to trust our guts when we make important decisions. Unfortunately, our guts are full of questionable advice. The Ultimate Red Velvet Cheesecake that clocks in at 1,540 calories is exactly the kind of thing that our guts get excited about. Yet no one would mistake this guidance for wisdom.

Often our guts can't make up their minds at all: an estimated 61,535 tattoos were reversed in the United States in 2009. A British study of more than 3,000 people found that 88% of New Year's resolutions are broken, including 68% of resolutions merely to "enjoy life more."

If we can't trust our guts, then what can we trust? Many business people put their faith in careful analysis. To test this faith, two researchers, Dan Lovallo, a professor at the University of Sydney, and Olivier Sibony, a director of McKinsey & Company, investigated 1,048 business decisions over five years, tracking both the ways the decisions were made and the subsequent outcomes in terms of revenues, profits, and market share. The decisions were important ones, such as whether or not to launch a new product or service, change the structure of the organization, enter a new country, or acquire another firm.

The researchers found that in making most of the decisions, the teams had conducted rigorous analysis. They'd compiled thorough financial models and assessed how investors might react to their plans.

Beyond the analysis, Lovallo and Sibony also asked the teams about their decision process—the softer, less analytical side of the decisions. Had the team explicitly discussed what was still uncertain about the decision? Did they include perspectives that contradicted the senior executive's point of view? Did they elicit participation from a range of people who had different views of the decision?

When the researchers compared whether process or analysis was more important in producing good decisions – those that increased revenues, profits, and market share – they found that "process mattered more than analysis – by a factor of six." Often a good process led to a better analysis – for instance, by ferreting out faulty logic. But the reverse was not true: "Superb analysis is useless unless the decision process gives it a fair hearing."

Our normal habit to develop a quick belief about a situation and then seek out information that bolsters our belief is called the confirmation bias.

Dan Lovallo says that when he talks about process with corporate leaders, they are skeptical. "They tend not to believe that the soft stuff matters more than the hard stuff," he said. "They don't spend very much time on it. Everybody thinks they know how to do this stuff."

The discipline exhibited by good corporate decision makers – exploring alternative points of view, recognizing uncertainty, searching for evidence that contradicts their beliefs – can help us in our families and friendships as well. A solid process isn't just good for business; it's good for our lives.

Why a process? Because understanding our shortcomings is not enough to fix them. Does knowing you're nearsighted help you see better? Or does knowing that you have a bad temper squelch it? Similarly, it's hard to correct a bias in our mental processes just by being aware of it.

Most of us rarely use a "process" for thinking through important decisions, like whether to relocate for a new job, or how to handle our frail, elderly parents. The only decision-

making process in wide circulation is the pros-and-cons list. The advantage of this approach is that it's deliberative. Rather than jump to conclusions we'd hunt for both positive and negative factors until we felt ready to make a decision.

The pros-and-cons approach is familiar. It is commonsensical. And it is also profoundly flawed.

Research in psychology over the last 40 years has identified a set of biases in our thinking that doom the pros-and-cons model of decision making. If we aspire to make better choices, then we must learn how these biases work and how to fight them.

When it comes to making decisions, it's clear that our brains are flawed instruments. Given that we're wired to act foolishly sometimes, how can we do better?

The Four Villains of Decision Making

1. Steve Cole, the VP of research and development at HopeLab, a nonprofit that fights to improve kids' health using technology, said, "Any time in life you're tempted to think, 'Should I do this OR that?' instead, ask yourself, 'is there a way I can do this AND that?' It's surprisingly frequent that it's feasible to do both things."

   For one major project, Cole and his team at HopeLab wanted to find a design partner, a firm that could help them design a portable device capable of measuring the amount of exercise that kids were getting. There were at least seven or eight design firms in the Bay Area that were capable of doing the work. In a typical contracting situation, HopeLab Would have solicited a proposal from each firm and then given the winner a giant contract.

   But instead of choosing a winner, Cole ran a "horse race." He shrank down the scope of the work so that it covered only the first step of the project, and then he hired five different firms to work on the first step independently. (To be clear, as a nonprofit, HopeLab didn't have unlimited resources. Cole knew that what he'd learn from the first round would make the later rounds more efficient.)

   With his horse race, Cole ensured that he'd have multiple design alternatives for the device. He could either pick his favorite or combine the best features of several. Then, in round two of the design, he could weed out any vendors who were unresponsive or ineffective.

   Cole is fighting the first villain of decision making, narrow framing, which is the tendency to define our choices too narrowly, to see them in binary terms. We ask, "Should I break up with my partner or not?" instead of "What are the ways I could make this relationship better?" We ask ourselves, "Should 1 buy a new car or not?" instead of "What's the best way I could spend some money to make my family better off?"

   Cole, with his horse race, is breaking out of the trap of narrow frame where we spotlight one alternative at the expense of all others. It wasn't an obvious move; he had to fight for the concept internally. "At first, my colleagues thought I was insane. At the beginning, it costs some money and takes some time. But now everybody here does it. You get to meet lots of people. You get convergence on some issues, so you know they are right, and you also learn to appreciate what makes the firms different and special. And when all of those five firms know that there are four other shops involved, they bring their best game."

   Notice the contrast with the pros-and-cons approach. Cole could have tallied up the advantages and disadvantages of working with each vendor and then used that analysis to make a decision. But that would have reflected narrow framing. Implicitly, he would have been assuming that there was one vendor that was uniquely capable of crafting the perfect solution, and that he could identify that vendor on the basis of a proposal.

2. There's a more subtle factor involved too – Cole, in meeting with the teams, would have inevitably developed a favorite, a team he clicked with. And though

intellectually he might have realized that the people he likes personally aren't necessarily the ones who are going to build the best products, he would have been tempted to jigger the pros-and-cons list in their favor. We think we are conducting a sober comparison but, in reality, our brains are following orders from our guts.

Our normal habit in life is to develop a quick belief about a situation and then seek out information that bolsters our belief. And that problematic habit, called the "confirmation bias," is the second villain of decision making.

Here's a typical result from one of the many studies on the topic: Smokers in the 1960s, back when the medical research on the harms of smoking was less clear, were more likely to express interest in reading an article headlined "Smoking Does Not Lead to Lung Cancer" than one with the headline "Smoking Leads to Lung Cancer."

Researchers have found this result again and again. When people have the opportunity to collect information from the world, they are more likely to select information that supports their preexisting attitudes, beliefs, and actions. Political partisans seek out media outlets that support their side but will rarely challenge their beliefs by seeking out the other side's perspective. Consumers who covet new cars or computers will look for reasons to justify' the purchase but won't be as diligent about finding reasons to postpone it.

The tricky thing about the confirmation bias is that it can look very scientific. After all, we're collecting data. Dan Lovallo said, "Confirmation bias is probably the single biggest problem in business, because even the most sophisticated people get it wrong. People go out and they're collecting the data, and they don't realize they're cooking the books."

At work and in life, we often pretend that we want truth when we're really seeking reassurance: "Do these jeans make me look fat?", "What did you think of my poem?" These questions do not crave honest answers.

Or pity the poor contestants who try out to sing on reality TV shows, despite having no discernible ability to carry a tune. 'When they get harsh feedback from the judges, they look shocked. Crushed. And you realize: This is the first time in their lives they've received honest feedback. Eager for reassurance, they'd locked their spotlights on the praise and support they received from friends and family.

And this is what's slightly terrifying about the confirmation bias:

'When we want something to be true, we will spotlight the things that support it, and then, when we draw conclusions from those spotlighted scenes, we'll congratulate ourselves on a reasoned decision.

3. In his memoir, *Only the Paranoid Survive,* Andy Grove recalled a tough dilemma he faced in 1985 as the president of Intel: whether to kill the company's line of memory chips. Intel's business had been built on memory. For a time, in fact, the company was the world's only source of memory, but by the end of the 1970s, a dozen or so competitors had emerged.

   Meanwhile, a small team at Intel had developed another product, the microprocessor, and in 1981 the team got a big break when IBM chose Intel's microprocessor to be the brain of its new personal computer. Intel's team scrambled to build the manufacturing capacity it would need to produce the chips.

   At that point, Intel became a company with two products: memory and microprocessors. Memory was still the dominant source of the company's revenue, but in the early 1980s, the company's competitive position in the memory business came under threat from Japanese companies.

   Intel's customers began to rave about the quality of the Japanese memories. "In fact, the quality levels attributed to Japanese memories were beyond what we thought possible," said Grove. "Our first reaction was denial. This had to be wrong. As people often do in this kind of situation, we vigorously attacked the data. Only when we confirmed for ourselves that the

claims were roughly right did we start to go to work on the quality of our product. We were clearly behind."

Between 1978 and 1988, the market share held by Japanese companies doubled from 30% to 60%. A debate raged inside Intel about how to respond to the Japanese competition. One camp of leaders wanted to leapfrog the Japanese in manufacturing. They proposed building a giant new factory to make memory chips. Another camp wanted to bet on an avant- garde technology that they thought the Japanese couldn't match. A third camp wanted to double down on the company's strategy of serving specialty markets.

> Why a process? Because understanding our shortcomings is not enough to fix them. Does knowing you're nearsighted help you see better? Or does knowing that you have a bad temper squelch it?

As the debate continued with no resolution, the company began losing more and more money. The microprocessor business was growing rapidly, but Intel's failures in memory were becoming a drag on profits.

In the middle of 1985, after more months of fruitless debate, Grove was discussing the memory quandary in his office with Intel's chairman and CEO, Gordon Moore. They were both fatigued by the internal deliberations. Then Grove had an inspiration:

I looked out the window at the Ferris Wheel of the Great America amusement park revolving in the distance, then I turned back to Gordon and I asked, "If we got kicked out and the board brought in a new CEO, what do you think he would do?" Gordon answered without hesitation, "He would get us out of memories." I stared at him, numb, then said, "Why shouldn't you and I walk out the door, come back in, and do it ourselves?"

This was the moment of clarity. From the perspective of an outsider, someone nor encumbered by the historical legacy and the political infighting, shutting down the memory business was the obvious thing to do. The switch in perspectives –"What would our successors do?"– helped Moore and Grove see the big picture clearly.

Of course, abandoning memory was not easy. Many of Grove's colleagues were furiously opposed to the idea. Some held that memory was the seedbed of Intel's technology expertise and that without it, other areas of research were likely to wither. Others insisted that Intel's sales force could not get customers' attention without selling a full range of producers – memories as well as microprocessors.

After much "gnashing of teeth," Grove insisted that the sales force tell their customers that Intel would no longer be carrying memory products. The customers' reaction was, essentially, a big yawn. One said, "It sure took you a long time."

Since that decision in 1985, Intel has dominated the microprocessor market. It seems safe to say that he made the right decision.

Grove's story reveals a flaw in the way many experts think about decisions. If you review the research literature on decisions, you'll find that many decision-making models are basically glorified spreadsheets. If you are shopping for an apartment, for instance, you might be advised to list the eight apartments you found, rank them on a number of key factors (cost, location, size, etc.), assign a weighting that reflects the importance of each factor (cost is more important than size, for instance), and then do the math to find the answer (um, move back in with Mom and Dad).

There's one critical ingredient missing from this kind of analysis: emotion. Grove's decision wasn't difficult because he lacked options or information; it was difficult because he felt conflicted. The short-term pressures and political wrangling clouded his mind and obscured the long-term need to exit the memory business.

This brings us to the third villain of decision making: short-term emotion. When we've got a difficult decision to make, our feelings churn. We replay the same arguments in our head. We agonize about our circumstances. We change our

minds from day to day. If our decision was represented on a spreadsheet none of the numbers would be changing – there's no new information being added – but it doesn't feel that way in our heads. We have kicked up so much dust that we can't see the way forward. In those moments, what we need most is perspective.

Andy Grove had been compiling his pros-and-cons list about whether to exit the memory business for many years. But the analysis left him paralyzed, and it took a quick dose of detachment seeing things from the perspective of his successor – to break the paralysis.

4. The odds of a meltdown are one in 10,000 years.

–Virali Sklyarov, minister of power and electrification in the Ukraine, two months before the Chernobyl accident

Who the hell wants to hear actors talk?

– Harry Warner, Warner Bros. Studios, 1927

Our search for the final villain of decision making takes us back to January 1, 1962, when a young four-man rock-and-roll group named the Beatles was invited to audition in London for one of the two major British record labels, Decca Records. "'We were all excited," recalled John Lennon. "It was Decca." During an hour-long audition, they played fifteen different songs, mostly covers. The Beatles and their manager, Brian Epstein, were hopeful they'd get a contract, and they waited anxiously for a response.

Eventually they received the verdict. Dick Rowe of Decca wrote : "We don't like your boys' sound. Groups are out; four-piece groups with guitars, particularly, are finished."

As Dick Rowe would soon learn, the fourth villain of decision making is overconfidence. People think they know more than they do about how the future will unfold.

A study showed that when doctors reckoned themselves "completely certain" about a diagnosis, they were wrong 40% of the time. When a group of students made estimates that they believed had only a 1% chance of being wrong, they were actually wrong 27% of the time.

We have too much confidence in our own predictions. When we make guesses about the future, we shine our spotlights on information that's close at hand, and then we draw conclusions from that information, Imagine the head of a travel agency in 1992: 'My travel agency is the market leader in Phoenix, and we have the best customer relationships. This area is growing so rapidly. We could easily double in size over the next ten years. Let's get ahead of the curve and build those additional branches.'

The problem is that we don't know what we don't know. Whoops, the Internet. So much for my travel agency.

The future has an uncanny ability to surprise. We can't shine a spotlight on areas when we don't know they exist.

Let's sum up where we are. If you think about a normal decision process, it usually proceeds in four steps:

- You encounter a choice
- You analyze your options.
- You make a choice
- Then you live with it.

And what we've seen is that there is a villain that afflicts each of these stages:

- You encounter a choice. But narrow framing makes you miss options.
- You analyze your options. But the confirmation bias leads you to gather self-serving information
- You make a choice. But short-term emotion will often tempt you to make the wrong one.
- Then you live with it. But you'll often be overconfident about how the future will unfold.

So, at this point, we know what we're up against. We know the four top villains of decision making. We also know that the classic pros-and-cons approach is not well suited to fighting these villains; in fact, it doesn't meaningfully counteract any of them.

– Excerpts from the book,
Decisive, *by Chip and Dan Heath*

BEYOND BUSINESS

The participants with the senior team of Thermax, Zensar, Unnati and the Pune Municipal Corporation; and Bhaskar (backrow right) : empowering skills

New skills for a change of life

Recently, Bhaskar Chikate received an appointment letter as a sales associate from Pune's West Side (Tata Trent) at a salary of Rs. 8500. He received the job offer as he was completing the 70-day skill development programme conducted by Unnati Foundation, an NGO, in partnership with Thermax, Zensar Technologies and the Pune Municipal Corporation (PMC).

Not long ago, getting another job was a distant dream for Bhaskar. Due to difficulties at home, he had to discontinue his studies after 10th standard and start work to help his family. He began with his brother who worked as a plumber. Despite over a decade of experience in plumbing, he could not start his own business as he did not have the capital to invest in basic tools. "I did not even have that much money to start on my own and so continued as an assistant with contractors in my area," says Bhaskar.

He tried changing jobs, but could not get one. He joined Unnati's training after a friend told him about it. Daily, he cycled 26 km to attend the 8. 30 AM to 6 PM sessions with seven others. On most days, after the rigorous training, he would attend to his plumbing work at late hours.

As he shows his appointment letter, Bhaskar's sense of achievement is clear. "I was refused a job as assistant in one of the big housing societies because I could not speak English. Now, thanks to this training, it is not just English, my confidence also has improved a lot," he says.

Unnati trained Bhaskar and his batch mates in spoken English, time management, team work, personality development, value systems, basic computer skills, accounting and customer care, making them ready for jobs in administrative assistance, hospitality and retail sectors in Pune. They have been offered jobs on salaries ranging from Rs. 8000/- to Rs. 12000/- per month.

Bhaskar explains how the course can be very useful for people like him who "come from poor backgrounds and need that first push through job oriented training." The training has brought in a change in attitude too: "Now, I am planning to take up studies and attempt my 12th exam this year."

The Skill Development Centre began functioning in January 2014. The training, with no fees being charged, empowers underprivileged youngsters with professional skills and helps them to be gainfully employed. The Centre plans to upgrade the skills of 300 candidates annually in the age group of 18 to 30 years, with assured employment.

This initiative aims to provide a meeting ground for industry requirements and the aspirations of unemployed youth in Pune. It will mark a modest contribution to the efforts of the National Skill Development Mission, gearing up to meet the challenge of providing a skilled workforce of over 500 million by 2022.

PMC's Urban Community Development (UCD) department is providing basic infrastructure for the Centre. Candidates successfully completing the training programme receive a certification jointly issued by Thermax and Zensar in partnership with Unnati and PMC. Unnati foundation has designed the programme and takes care of the selection of the candidates, their training and final placement. The centre appeals to people to spread the word about this programme so that more deserving people can benefit from it.

Applications for the programme at the Unnati Skill Development Centre can be sent to Milind Nagare, the Centre's Manager (e-mail: milindnagare60@gmail.com) or candidates can visit the centre for information/ registration or contact the centre on 020- 65000611 between 9AM to 5PM.

In appreciation of the Puneri Signal Jumper

When I arrived in Pune, I was fairly confident of having seen most of the circus that is Indian road traffic. Here I am consciously avoiding the use of 'vehicular traffic' out of respect for the cows, dogs and pigs that contribute to a healthy 10% of our traffic at any point of time. The constant honking, utter disregard for lane driving, sudden turns without signalling and the odd driver or two who jump the signal – these are passé. My experience with other Indian towns had even prepared me for some exotic stuff : the cab drivers of our National Capital Region trying to squeeze in their Innovas through one-foot-wide gaps between lanes as if they were cats; Kolkata's ancient tram crawling at a speed of 10 reminding you that life is not a race when you are in a real hurry to reach Howrah station; or the auto rickshaw driver of Hyderabad who in a moment of suspended disbelief, like Amir Khan in Dhoom 3 demonstrates his skill in driving his auto on two wheels while his passengers sit tight holding on for dear life.

But I was wrong. Pune has reached a higher level in the art of rubbishing traffic rules and it goes beyond antics of individual drivers. The city has a systemic solution to the minor problem of staying put when the signal is red: just pretend that the colour is green. Though a devilishly simple and effective solution, it is not easy for a newcomer to understand. Initially, I have been embarrassed few times thinking that, maybe, I was watching the wrong signal post as, surely, so many people together cannot be jumping the gun. It was only when a fellow idiot stopped besides me even as everyone moved on that I realised the city's great art.

Even after 8 months in Pune, I am yet to get over the initial sense of awe I felt on watching this systematic and daily signal jumps. In my eagerness to belong, I too may have tried my hand at this great art form in some minor form. However, the expertise of the average Punekar continues to amaze me.

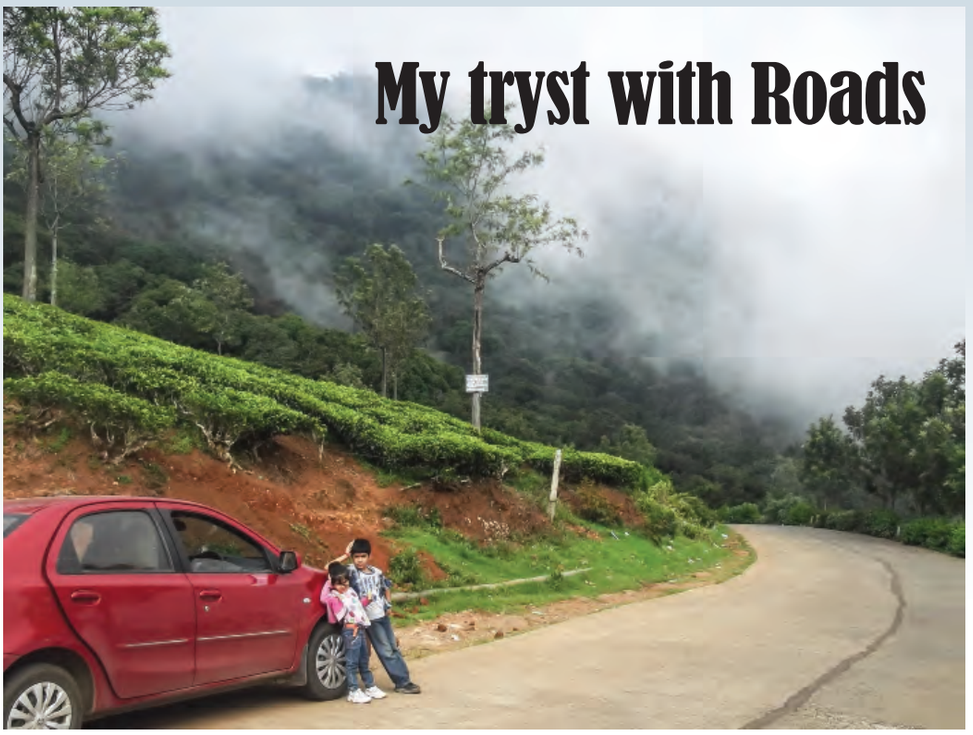
Even among practitioners of this high art, there exists a wide variety of styles. There is the 'get the hell out of my way' school of signal jumpers who would constantly honk from behind when you happen to stay put at a red light wrongly thinking that it is the right thing to do. Then there is the 'don't try to be self-righteous and move on' school disciple who would happily jump the signal if the person in front is doing so, but if the person ahead decides to give traffic rules a chance, he would pause and wave his hand in frustration. Then there are the 'I know it's wrong but I am doing it just this time' practitioners who haven't been able to be completely free from the remorse one feels at breaking the law, and hence would do it occasionally and that too hesitantly, as if justifying to themselves that this time it is ok as there is no one coming from the other side. There are many more individual styles which if catalogued would probably equal the total number of holes being dug up on the road by PMC at peak traffic time.

The whole traffic jumping thing reminds me of a movie scene from *Matrix*. The hero meets a boy who can bend a spoon using just his mind. The boy tells him not to try to bend the spoon as it is impossible. Instead he should realize the truth; that there is no spoon, it is only you who bends. Similarly, I have come to the conclusion that in Pune, do not try to follow traffic rules, instead realize the higher truth that there are no rules, that it is only you occasionally obstructing the path of the enlightened.

VOICES

– Bhushan Chitaley
Chairperson's office

My tryst with Roads



Over the past 15 years, changing three partners (read three different cars) I would have easily covered the distance between Leh and Kanyakumari, many times over. The scores of trips to Mumbai and Konkan belt and over 20 trips to Goa and Malvan no longer qualify as long drives anymore. In fact, trips to Bangalore covering almost 900 km in a single day too seem to have become a habit.

My passion for road journeys started even earlier. An outdoor person, I have always found enough reasons to set off to new places and as a college student used to take to the roads on my bike in the company of footloose friends. When I look back, I can see that it all began as a childhood crush on machines. I was barely five when I put my mother's gold plated wrist watch under a hammer with the innocent intention of finding out what makes it tick. Later, in college, it was natural for the tinker in me to take on mechanical with specialisation in automobile engineering. By then, it had moved from a crush to a full blown romance with machines, especially the ones that you can ride to go places, the two wheeled or the four wheeled ones. A few of them always get my heart to race a bit faster and slower at the same time.

In those early biking days, I have even participated in an adrenalin pumping round-the- clock 600 Km rally on a modified bike. Later in cars, mostly with my family, I have been on cross country trips. And yet again, there have been staid and peaceful long drives with no destination in mind, literally driving for the sheer joy of enjoying a journey. Being a 'journey man', I have relished it all.

Your machine has to be good enough to sustain your passion. Once I started work, I graduated from a bike to a car. Did my own first car, a second-hand Maruti fit the bill? To break away from the beg - borrow - steal options to get behind wheels, I managed to give the old lady a make-over with my own hands. With some additional help from a few car mechanic friends I was confident enough to take off on long trips, any time of the day or night.

There are several memorable drives I have had. There is the recent one we did from Pune to Rameswaram, onward to Dhanshkodi, and then driving along the east coast all the way to Kanyakumari and return via the west coast: a distance of almost 4000 km covered in one trip in 11 days. Driving through the sultry and picturesque

landscape of Kerala, some stretches through the torrential rains that you can experience only there, was unique. Imagine inching through narrow and busy 'National Highways' cluttered with people and myriad forms of transport, and compare it to the familiar flow on Expressways. For those familiar with fluid mechanics, transient flow Vs laminar flow would be a close analogy. Add to it the thrill of driving along the sea coast with the freedom to stop at will. You can dip your body in the saline water, surf the waves and later quench your thirst with the refreshing coolness of water from tender coconuts.

Driving in the Himalayan foothills, all the way to Kufri and beyond, is an entirely different experience. So is the stretch through the misty hills decorated with pines in the Dehradun valley, covering Mussorie and other hilly perches in Uttaranchal. Changing vegetation makes no two hill drives the same, as you discover while driving through the Ooty-Wellington belt.
I can already feel each journey jostling for a mention. It is not easy to list them on a scale of 'memorableness.' Each is unique in its own way, each had something different to get nostalgic about. I have enjoyed all my trips.

They are always supported by good music that I carry and my interest in photography. Quite early at the beginning of journeys, I had the good sense to invest in an SLR camera. Today many of those snaps from the travels across India add another flavour to the visuals remembered and stored away in my mind.

Fortunately, my wife has, slowly but with ample effort, left her initial apprehensions behind. After a decade of many adventures together, she now believes that I do intend to get the family back in one piece. Both my kids have adapted to long drives. Though I like to believe it's the gift of the genes, my wife insists it is a habit I forced on them, and stems from spending most vacations on the road. Maybe genes and habit together have given them a love for the nomad's ways.
I have no reason to complain.

All journeys have not been leisurely walks in the rose garden. During one trip from earlier days when speed held such exhilaration, when one's young blood thrills to be in control on winding roads, I remember negotiating a very sharp turn on the steep slopes of the Raigarh fort. Even at a low gear I felt my side of the car literally saying goodbye to the road below. It was unnerving. Fortunately, the others in the car did not realise what was happening, or the dryness that gripped my throat. Not for me ever since, any such James Bond stuff with cars on two wheels. Centre of gravity of a car is important and it has to be respected. A safe drive is the only kind of drive one should aim for.

A series of punctures while driving through the mining area of Dandeli, where you can drive for miles without seeing anyone, taught me to carry a complete do-it- yourself puncture repair kit and an air pump in the car. I always carry two medical kits, one in the boot and another in the glove compartment. A complete tool kit, a dozen extra fuses, a few wires, a wire stripper and a few bottles of water are essential items for any trip. The levels of radiator coolant, brake fluid, engine oil, and windscreen wash liquid, along with air pressure in tyres need to be checked at all times especially before you plan a longish drive. In fact I have a ready reckoner and a check list of things- to- carry which helps even kids to do a cross verification of what all are needed to be stacked in a jiffy.

My car boot also carries, among other things, a few packets of cookies and some juices. The nearest hotel could be light years away and hungry children can be heart breaking as well as distracting.

After a bullock cart suddenly emerged in the only illumination offered by my head lights, right on a six- laned highway, the last place you would expect it, I gave up night time driving except on emergencies. Such random and rare incidents make you a firm believer in the need to make even children strap their seat belts on the back seat.

Having negotiated dangerous and inviting curves, long and picturesque, sultry and saline beach drives, highs of mountains and ebbs of deep valleys, have I satiated my desire to drive on for the next adventure? Give me some good music, good company and miles of natural surroundings, even in my sleep I would definitely say a big NAY.

– Vivek Taneja
Power Division

SLICE OF LIFE

Smileys don't cheer up their maker

To some, an email isn't complete without the inclusion of :-) or :-(those 'emoticons' or communicative graphics. To others, they represent all that has gone wrong with the English language.

The birth of 'smileys' can be traced to the precise minute: 11:44 am on September 19, 1982 when Professor Scott Fahlman, of Carnegie Mellon University in Pittsburgh, sent an email on an online electronic bulletin board that included the first use of the sideways smiley face: "I propose the following character sequence for joke markers :-)."

Nowadays dozens of variations are available, mainly as little yellow, computer graphics. There are emoticons that wear sunglasses; some cry, while others don Santa hats. But Professor Fahlman isn't a fan."This was a little bit of silliness that I tossed into a discussion about physics...I think they are ugly, and they ruin the challenge of trying to come up with a clever way to express emotions using standard keyboard characters.".

(From the Independent)

This prescient cartoon from Peter Steiner in the New Yorker (July 1993) has become a classic

"On the Internet, nobody knows you're a dog."

What do you do with husbands in Chinese malls?

In China, nifty facilities for shopping-averse men have popped up in some malls. These "husband storage" facilities act as both rest stations and meeting points for men who prefer sitting around to digging through the racks. Called "laogong jicun chu" in Chinese, which literally means "husband cloakroom," the rest stations are for husbands who are either knackered from shopping or for those who would rather spend their time doing something else.

The facilities offer a range of activities and services to "meet the needs of male customers," such as smoking, internet access, drinking, snacks, television and "beautiful attendants." But they vary in fanciness depending on the mall. Some "just have benches for the men to sit and think," some resemble train station waiting rooms; others are set up like small cafes.

{Adapted from http://www.smithsonianmag.com}

Ringing in the new year

Year- end festivals brought gaiety and colour to Thermax work centres. Treasure hunts, musical chairs and games brightened the Diwali mood. The fun events saw employees participating with vigour and displaying their skills. They dressed up for the occasion and enlivened the occasion. Christmas time, carols were sung and Santa found enough merry ones to linger around.

Thermax Enviro's new facility for air pollution control systems

Bag filters and electrostatic precipitators are manufactured at this advanced facility at Chincholi MIDC, near Solapur. Spread over 25 acres of land with a total covered area of 15000 sq.mts, it comprises fabrication shops, copper slag blasting booths and painting shed along with stores. The fabrication shops are equipped with overhead cranes and state-of the- art welding equipment.

The Solapur plant provides Thermax the advantage of maintaining product quality and delivery schedules. Equipped with container handling and stuffing facilities, it has already supplied emission control equipment for overseas projects.

The facility has been planned with adequate environmental safeguards such as provision for green zone, plantation of trees, rain harvesting and an STP to process sewage and use the cleaned water for gardening. For people at work, the plant provides dust-free and well-lit environment.