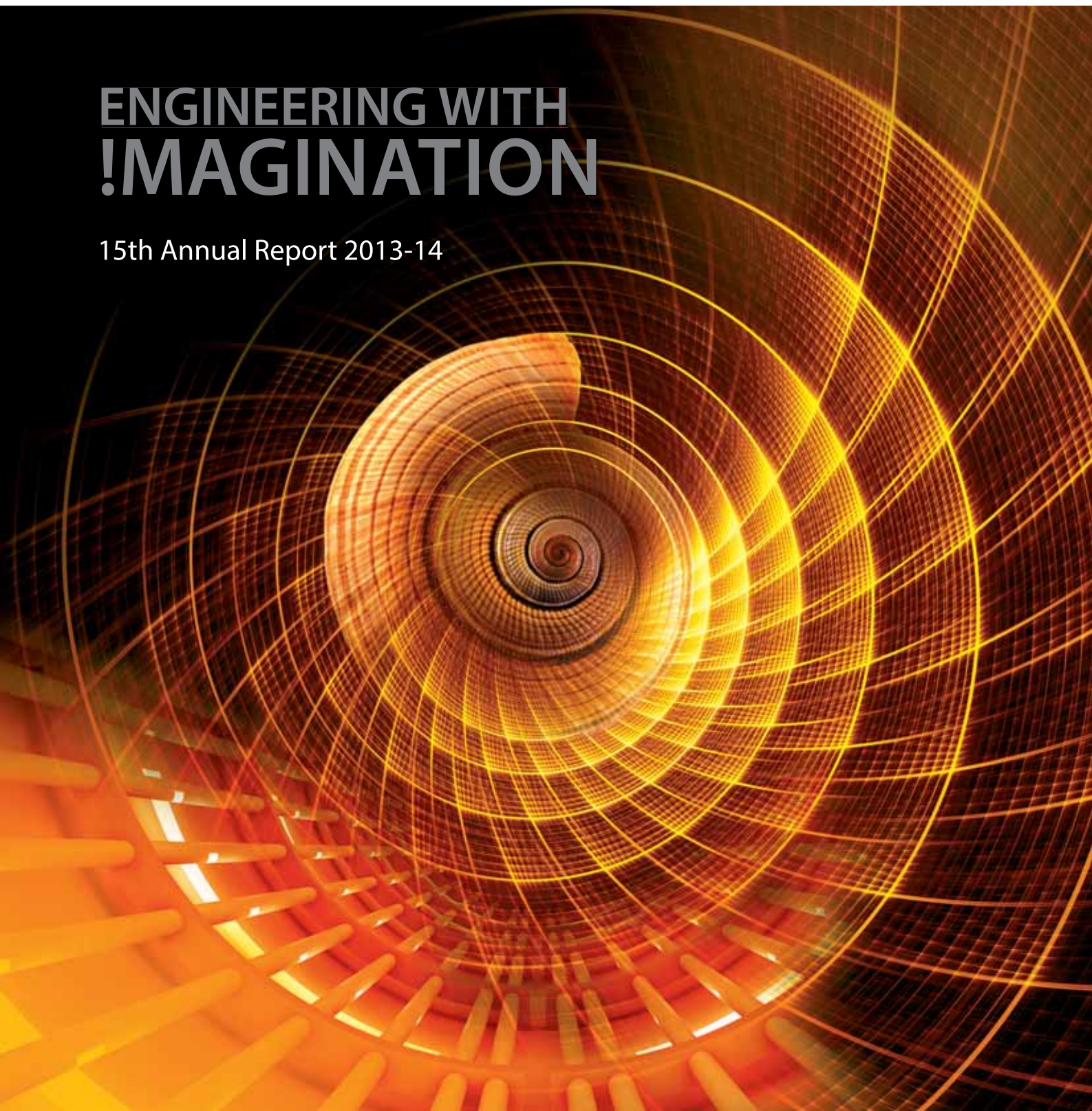
TATA CONSULTING ENGINEERS LIMITED

ENGINEERING WITH !MAGINATION

15th Annual Report 2013-14



Forward-looking statement

This annual report and other statements – written and oral – that we periodically make contain forward-looking statements that set out anticipated results based on the management's plans and assumptions. We have tried wherever possible to identify such statements by using suitable words in connection with any discussion of future performance.

We cannot guarantee that these forward looking statements will be realised, although we believe we have been prudent in our assumptions. The achievement of results is subject to risks, uncertainties and even inaccurate assumptions. Should known or unknown risks or uncertainties materialise, or should underlying assumptions prove inaccurate, actual results could vary materially from those anticipated, estimated or projected.

We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise.

ENGINEERING WITH !MAGINATION

Engineering with Imagination represents engineering solutions laced with imagination or creativity. Imagination may consist of new ideas or inspired solutions. The visual theme of the Report uses the conch shell as an example of inspired engineering. Several engineering concepts in nature can be reverse engineered to arrive at unique solutions. The material architecture of a conch shell is made up of crystallites of calcium carbonate glued in place as planks, sheets and layers and organised at right angles. This unique structure makes it very sturdy and difficult to cut through, keeping an invertebrate inside the shell well-protected. This structural and material engineering concept can serve well in the construction, manufacturing and engineering fields. The conch also holds mysteries of acoustic engineering. The mysticism around the conch is varied; it is a symbol of prosperity and is considered sacred among many Asian and African cultures. The cowrie shells are said to have been a form of currency in early times. Smart engineering is all about 'Engineering with !magination.'

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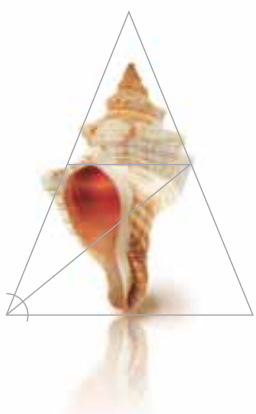
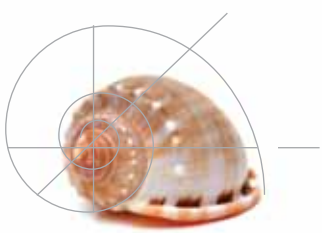




VISION

To be an internationally respected engineering consultant offering comprehensive solutions

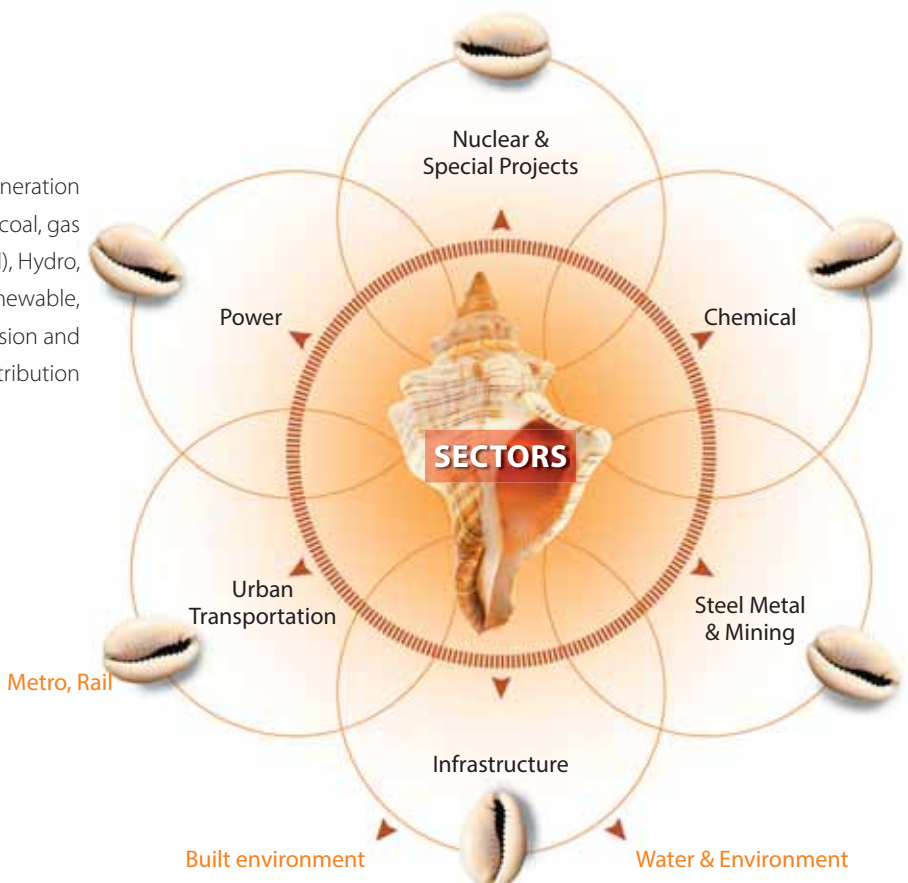
MISSION

Provide technically excellent and innovative solutions, for adding value for all stakeholders, and operate globally as professional consulting engineers

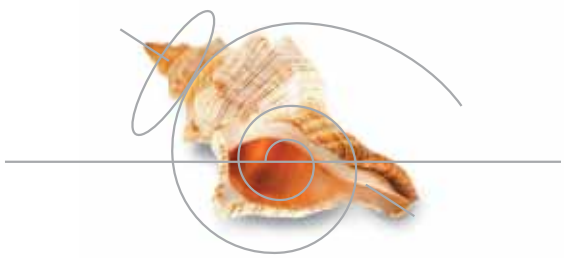
CORE VALUES

- Customer satisfaction and loyalty
- Responsibility to society
- Organisational and individual growth
- Technical excellence with professional ethics
- Employee dignity and self respect

Business Operations



Business Structure



Corporate Services

Finance & Accounts | Legal & Secretarial | Technology

HR & Administration | Business Excellence | Safety | Corporate Communications & CSR

Infrastructure

Nuclear and Special Projects

Power

Chemical

Steel, Metals and Mining

Urban Transportation

Construction Management

Advanced Technologies

Services

Design Engineering	• Feasibility studies, Pre-project reports and technical studies • Architecture & master planning • Layout Planning • Electrical, MEP and Instrumentation • Environment and air quality control services • Design & Detailed engineering • Utilities & Shared Services • Environment impact assessment • Sustainability and green technology solutions
Project Management	• EPCM services, Procurement management, Quality inspection • Engineering projects planning and supervision • Project management services • Commissioning support
Procurement Management Services	• Quality, Inspection & Equipment management • Inquiry/Tender Preparation and Award • Procurement Management Services
Construction Management	• Supervision, construction project management and commissioning • Safety management
Advanced Technologies	• 3PLM services - Project, Plant & Product Lifecycle Management • Engineering Outsourcing - Product Engineering, Plant Engineering • Manufacturing Engineering - Plant Automation & Manufacturing Process Design • Digital 3D/4D/5D Design & engineering services • BIM, Constructability Analysis and Site Optimisation • Asset Lifecycle Management Solution • Engineering Simulation and Validation Services

Awards
2013 - 14

Tata Consulting Engineers Honoured With Best Consultant/ Consultancy Award At The 6th India Power Awards 2013 Instituted By The Council Of Power Utilities

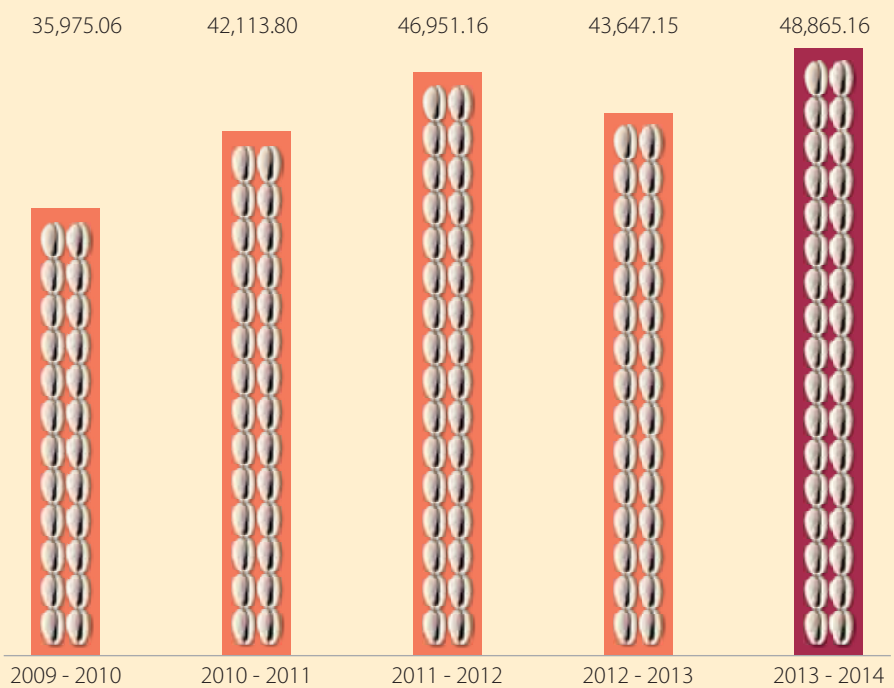
Indo-American Trade Excellence (IATE) Award 2014 for Operational Excellence in Other Services (Indian Co. in the USA) from the Indo-American Chamber of Commerce , WIC.

Tata Consulting Engineers Wins Tata Innovista 2014 For Promising Innovation - Core Process In Thermal Power Plants/Flue Gas Desulpharisation Systems.

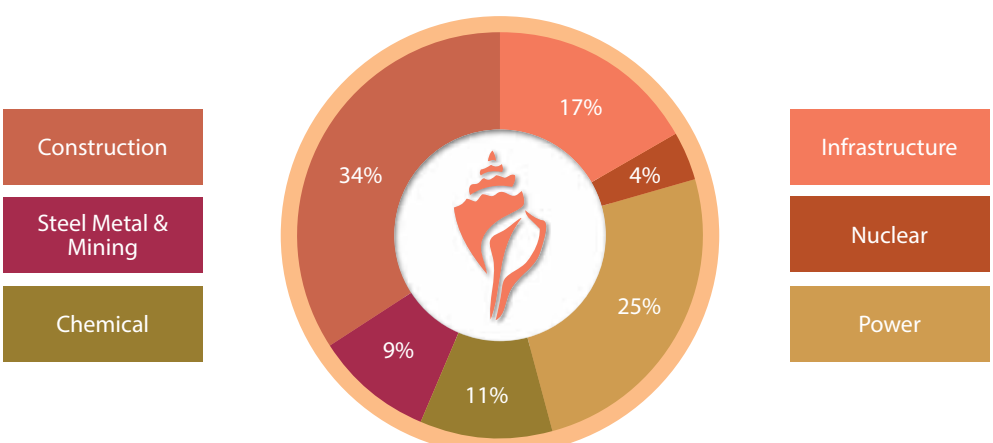
Excellence in Communication Awards- Best Publication- Internal Engagement for house magazine 'TCExpression'at the Brand & Corporate Communications Meet 2014

Financial snapshot

Total Revenue (₹ in lakh)



Sector-wise contribution as a % of Revenue from operations – (2013-2014)



Rounded off to the nearest digit

Board of Directors

Prasad Menon
Chairman

A P Mull
Director

A K Vora
Director

F N Subedar
Director

S Padmanabhan
Director

J P Haran
Managing Director

Amit Sharma
Executive Director & COO

Subsidiaries

Ecofirst Services Limited

Board of Directors

F N Subedar (Until 10.06.2014)

J P Haran, *Director*

Amit Sharma, *Director*

Risheshwar Prasad, *Additional Director (w.e.f. 1.07.2014)*

Chitranjan Kaushik
COO
Ecofirst Services Limited

TCE QTP LLC

Board of Directors

Prasad Menon, *Chairman*

A P Mull, *Director*

J P Haran, *Director*

Corporate Management Committee

J P Haran
Managing Director

Amit Sharma
Executive Director & COO

Risheshwar Prasad
Sr VP & CFO

D H Savarkar
Sr. VP, Corporate HR & Administration

Mahesh Marve
Sr. VP & CTO

Shrikant Chandratreya
VP, Business Excellence

Sachin Mishra
(w.e.f 18.06.2014)
Asst. GM Legal & Company Secretary

Mohan Murthy
Sr VP, Power

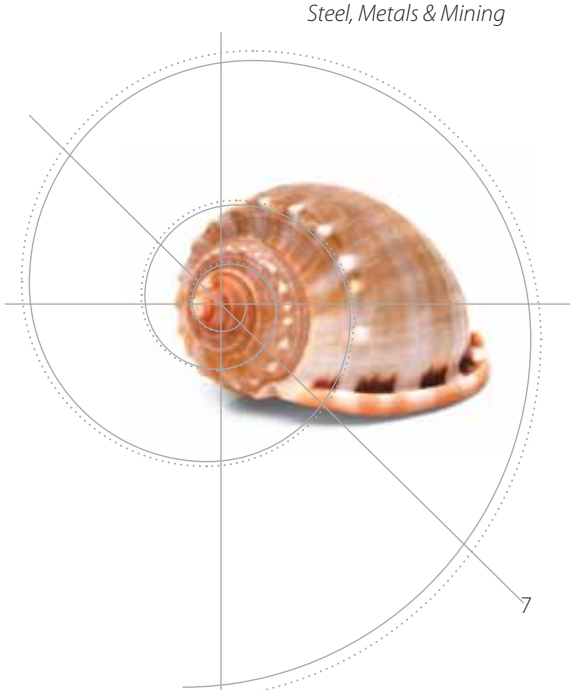
B M Nichat
VP, Chemical

Dr. Tapan Choudhury
VP,
Steel, Metals & Mining

Vikram Bapat
AVP, Infrastructure

K Ramesh
AVP, Construction

M V Soman
Sr GM, Nuclear & Special Projects



MANAGEMENT MESSAGES

From the Chairman's Desk

Over the last few years, Tata Consulting Engineers has been continually evolving to position itself as a leading global engineering and consulting services organization. In the changing landscape, post the recent global slowdown, it is anticipated that customer demands will change rapidly and expectations will also increase exponentially. Our customers are faced with a multitude of challenges – ensure speedy project execution, deliver cost efficiency, actively manage environmental and sustainability concerns, safety and risk management, increasing regulatory compliance needs, etc. It is therefore imperative for service providers like Tata Consulting Engineers to weave agility and innovation into the DNA and culture of the organization.

These are indeed exciting times for the Company, given its rapid progression from providing engineering solutions, to solving complex customer challenges, to providing innovative solutions. Technology tools combined with core engineering expertise poses a large window of opportunity to set in motion disruptive innovations. Tata Consulting Engineers is innovating and IT-enabling itself specific to engineering, to ensure greater engineering predictability, thereby being in a position to provide substantial reductions in project cost & time. This will be supplementary to the existing organizational DNA of continually enhancing the quality of services delivered to our customers.

Plan & Direction

Over the recent years, Tata Consulting Engineers undertook several measures to address the issue of sustained, long term growth and scalability. The Company continues to balance its business interest and presence in both domestic and global markets. Tata Consulting Engineers plans to align with Tata Group global growth plans and deepen as also widen its footprint in select geographies.

These are indeed exciting times for the Company, given its rapid progression from providing engineering solutions, to solving complex customer challenges, to providing innovative solutions. Technology tools combined with core engineering expertise poses a large window of opportunity to set in motion disruptive innovations.

In the fiscal year 2013-14, breakthroughs were attained in a few new markets, with Tata Consulting Engineers acquiring marquee customers in South Korea and some African countries. Power, Chemical, Mining and Water & Waste management were amongst the sectors that won significant new deals. The incremental focus this year will be to build its presence and acquire customers in USA, Europe and the Middle East. There is also a renewed focus to identify strategic partnerships, as also to pro-actively explore inorganic growth possibilities within the developed world.

The thrust of Tata Consulting Engineers into these global markets will be to offer IT-enabled innovative engineering solutions, leveraging existing capabilities in multiple sectors.

The risk assessment framework envisaged in 2012-13 was rolled out successfully and is fully implemented. The CSR Committee of the Board, as per the guidelines of the recent Company's Act was formed. The CSR strategy of the Company will continue to focus on four core areas (Community, Environment, Education and Engineering) thereby utilizing the Company's expertise to contribute effectively to the community.

Performance Review

The market conditions of the countries in which Tata Consulting Engineers operates strongly influences our performance. Weak domestic demand, with the GDP growth being the lowest in a decade, coupled with adverse investment climate created pressure on most sectors that have traditionally provided growth avenues to the Company. Despite the challenging market situation globally and in India, the Company acquired some very reputed brands as new customers, both in the domestic as well as international markets.

The Company has posted positive growth, both in terms of business acquisitions as well as gross revenues. The increase in international business acquisitions more than compensated the slowdown in domestic market. This has led to an increase in revenues, whilst significantly contributing to the bottom line too.

The likely recovery of the domestic and global economy augurs well. The Company's new business acquisitions for the year 2013-14 were at an all time high of ₹744 crores, and helps set the pace for this year. Gross revenue grew marginally over the previous year, and profit before tax saw an increase of 108 % over the previous year.

The longer term goal is to leverage technology in conjunction with core engineering expertise to provide innovative solutions that can help our customers deliver more with less. The continued support of our large and skilled talent pool will help accelerate the pace to truly position Tata Consulting Engineers on the global radar.

Sincerely yours,

Prasad Menon
Chairman

Message from the Managing Director

Dear Stakeholders,

The year 2013-14 was significant as a good number of initiatives were launched yielding tangible results by way of considerable improvement in business acquired, top line and bottom line growth. The company will continue to strive towards better results in the coming years keeping in line with long term objectives.

One of the key enablers for this goal is a thrust on Innovation. The process of innovation stems from understanding the clients' problem and delighting them with innovative solutions.

Tata Consulting Engineers has strived to provide solutions that are a first of its kind - several special projects like the largest steerable radio telescope, the first under-creek tunnel for water transmission, India's first 800 kV power transmission line and many more. Tata Consulting Engineers is taking a more structured approach to drive the innovation process and build competitive edge. The year 2014 is indeed a year for innovation. Subsequent to the accolades received in process innovation in coal blending in 2012-13, our efforts in providing cost efficiency in FGD systems in coal-fired thermal plants received recognition at the Tata Innovista 2014 award for 'Promising innovation- Core process' for a new approach in sea-water based Flue Gas Desulphurization(FGD) system for coal-fired thermal power plants. Rewarding and recognizing innovation, the annual Innovision contest is an internal program for recognition of innovation and the Tata Innovista is a Group supported program, encouraging innovation

among the Group companies. I am proud to say that we proved our mettle amidst several entries from Group companies from across the globe. Innovation is critical to us as we discover new solutions to our customers that are both cost efficient and environmentally friendly.

Corporate Initiatives

Initiatives in the year 2013-14

- The risk management framework was rolled out and systems were put in place to monitor and mitigate risk. Critical projects pass through the risk framework and the Audit Committee monitors and reviews the risk instances and mitigation strategies.
- The CMC committee, an apex corporate management committee was expanded to include business sector heads as we moved to a business unit centric framework in 2013-14.
- We established a Technology vertical to i) build a technology organization and knowledge management, ii) technology excellence and development to develop opportunities in new sectors iii) exploit current verticals to offer new areas of solutions to customers iv) provide rigor and excellence in delivery optimizing processes and systems and providing technology support to the business units.
- The Tata Business Excellence Model (TBEM) is based on the Baldridge Criteria for Performance Excellence. Tata Consulting Engineers has applied for an assessment to review and benchmark against global standards.
- The company set up the CSR committee in line with the recommendations of the Company's Act. Our CSR and Affirmative Action programs continued as planned using our core skills to benefit society.
- Focus on safety was driven through several awareness programs and documented processes established at the design stage, office and construction management level.
- The company qualified for accreditation for Environment Impact Assessment in additional sectors
- A dedicated centre in the special economic zone(SEZ) was set up to facilitate the new service stream, Advanced Technologies, which combines core engineering with complex IT applications
- A project office was set up in the state of Gujarat, to facilitate customers in the region. This is expected to develop into a full-fledged delivery centre in the coming years.
- TCE launched the Diversity & Inclusion program to ensure greater representation of women in the workforce. Focus group meets with senior management and women employees were conducted to review current status and introduce policy decisions.
- Driving brand visibility and customer engagement, TCE launched a new website compatible with new- era digital devices. Tech Speak, the official blog to show case the TCE brand proposition as a technology-driven organization was also launched.

Performance Review

The financial year 2013-14 saw the fruition of some large sales orders in the domestic and international regions. The strategy to partner with EPC companies and take a combined approach to marketing proved successful. Tata Consulting Engineers formed agreements with leading EPC companies in Korea and the combine opened up new opportunities in Africa & the Middle East.

Tata Consulting Engineers' financial performance for 2013-14 was positive even as the turnaround in the economy continued at a slow pace. The company posted total revenue of ₹488.65 crores. This was achieved on the strength of new businesses in the international markets and some large value accounts in the domestic markets. Profit before tax grew to ₹72 crores in 2013-14 which is a 108% increase over the previous year. The company stayed resilient in a tough market situation, managing expenditure prudently and investing in IT- tools and systems to build a leaner

and cost effective delivery model. High value sales orders acquired in 2013-14 are expected to fructify in the next financial year. New business acquisitions in the international markets in Africa, Middle East and Southeast Asia are expected to reflect in the top-line and bottom-line growth in the year 2014-15.

Outlook for future

New policy decisions and legislations to stimulate economic growth in the country are expected in the year 2014-15. TCE stands to benefit from these measures, especially in the Power, Infrastructure, Steel, Metals & Mining sectors. TCE's plan for 2014-15 is to –

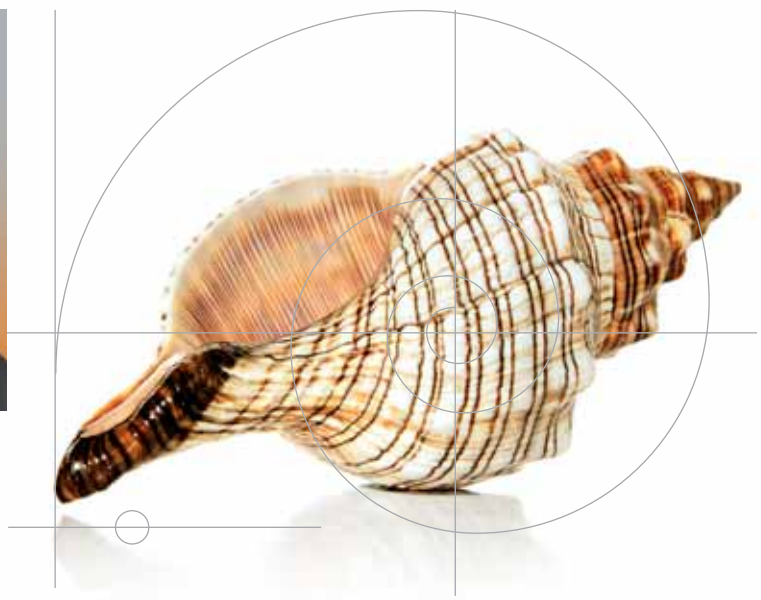
- Expand presence in the West (USA & Europe) with services in Advanced Technologies
- Seek inorganic growth opportunities to offer solutions in new sectors
- Expand footprint in the APAC region on the strength of existing alliances in the Korean region.
- Spin off Urban Transportation as a new business Unit and provide core services relevant to the transport sector in the metro, rail, airport and ports verticals.
- Build intellectual property and knowledge base to add more patents.
- Build our presence on social media channels to engage and listen to customers and the community and build the TCE brand
- Revise Human Resources policies to increase diversity at the work place. Tata Consulting Engineers' women employees constitute nearly 20 %. We hope to create a climate conducive for retention and elevation of star performers to higher managerial roles.
- Extend our Affirmative Action program to more locations for enhancing employability of marginalized sections

The company has put several initiatives in place to steer towards growth and scale. Engineering with Imagination is a transition that we believe will catapult TCE to the top rung global consultants. Through innovation, we will ensure cost efficient and environment-friendly solutions to our customers.

Sincerely yours,

J P Haran

Managing Director



Operations Perspective

-Amit Sharma, *ED & COO*

Tata Consulting Engineers with its strong engineering roots has adopted latest innovations in digital engineering and effectively reorganized itself to be relevant to the exciting market opportunities and customer needs. This readiness has been the crux of the past year's developments.

Tata Consulting Engineers had embarked on a business transformation program, 'Rhythm' in the year 2012-13. The Rhythm initiatives that commenced gained traction in 2013-14. Operations were aligned to key levers like Customer, People, Technology, Delivery and Growth with customer centricity, mobility and agility as the key drivers.

Tata Consulting Engineers moved away from the regional office-centric approach to sector focussed Business Units that became profit centers. The Business Units are now standalone units with their own governance, sales, delivery and execution engine. This helped the Business Units to collaborate and ensure that the best talent and solutions from across TCE was available to clients. Support functions were strengthened for greater focus on each sector and the relevant geographies for that sector. Organizational structure was re-aligned to sales, customer focus and relationship building, marketing, industry alignment and consultative selling aligned to the Business Units for enhanced industry and customer focus.

Delivery mechanisms were strengthened with sector teams mobilized at delivery centers across

locations for greater customer support and agility. Program and Project management were given a renewed thrust and effective planning and control mechanisms were put in place for all projects. Seamless delivery support systems were built through extensive IT enablement; use of remote working tools, 3D software, collaboration enablers and document management solutions were adopted. This provided agility, collaborative working, better decision making and project controls to facilitate international market thrust. A fully integrated ERP system is being rolled out in phases that will integrate with existing systems such as CRM, Project Management Systems, HR management systems, Project planning and controls, resource and project report management systems, etc. An integrated enterprise approach spanning the project delivery lifecycle – from customer relationship to proposal management, risk assessment and management – to project operation and controls, and invoicing and collection have been introduced to strengthen the entire operational ecosystem. Communication systems for virtual collaboration were rolled out for seamless working in a geographically- distributed environment. 3D tools and technologies and partnerships with IT application service providers helped to establish a digital design environment. A distributed delivery execution model with utilization of resources across locations made for a seamless delivery approach in an optimal manner to create value.

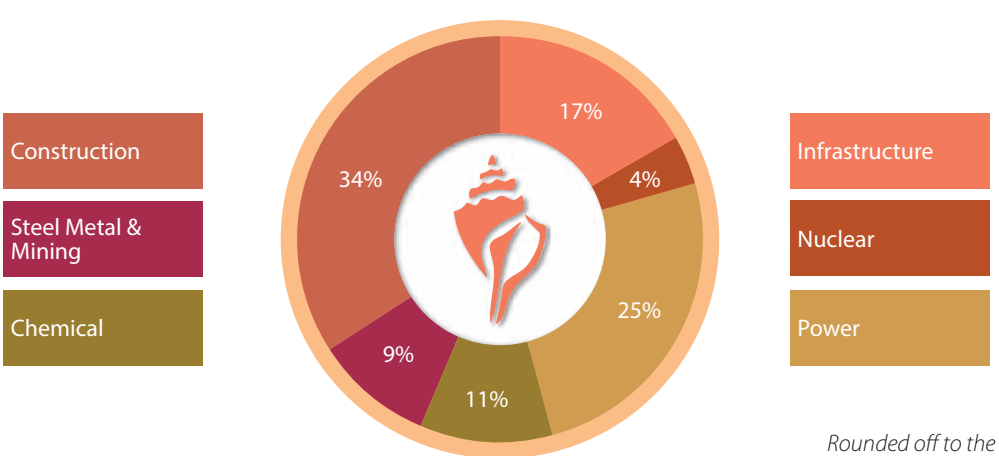
The new service stream, Advanced Technologies was established with a view to provide 3D/5D solutions using latest engineering toolsets available across the globe. This service stream is expected to help TCE make inroads in the US & European markets, while allowing innovation, predictable and optimal engineering in emerging markets. The Advanced Technologies service portfolio combines engineering tools with engineering domain and know-how to offer solutions in Infrastructure, Process & Energy sectors. Services comprise

1. 3PLM services - Project, Plant & Product Lifecycle Management Services;
2. Engineering Outsourcing - Product Engineering, Plant Engineering;
3. Manufacturing Engineering - Plant Automation & Manufacturing Process Design;
4. Digital 3D/4D/5D Design & engineering services; BIM, Constructability Analysis and Site Optimisation;
5. Asset Lifecycle Management Solution; Engineering Simulation and Validation Services

Business Analysis

The break-through in the Korean region with a partnership-based, go-to-market approach in the year 2013-14 fructified with key accounts in the regions of Korea, Middle East, Africa and APAC

Business-wise contribution to revenue from operations



Rounded off to the nearest digit

regions for the Power Business Unit. Our business opportunities in the African regions have been in the Power, Infrastructure, Mining and Chemical. This trend is expected to continue in the next year. Top-line growth was at 7% over the previous year with a revenue from operations of ₹ 459.56 crores in 2013-14. New business opportunities in the international markets combined with operational efficiencies by way of resource optimization and cost management strengthened the bottom line. Customer-centricity and profitability was a clear focus that yielded results. Profit before tax in 2013-14 was about ₹ 72 crores, an encouraging indicator that the company was back on track to past levels of profitability and slated for resurgent growth. The year gone by registered the highest sales pipeline of approx ₹ 744 crore and total turnover at ₹ 489 crore.

The year 2013-14 was a year of organizational restructuring to ready the operations as the economy gathers momentum. In terms of sector-wise performance, Infrastructure, Power and PMC/Construction services performed well with contribution to the overall revenue from operations at 17%, 25% and 34% respectively. Steel Metal & Mining's share in the revenue from operations was at 9%. The Nuclear & Special Projects posted marginal returns with many projects and clearance for EPC's participation in nuclear power and special projects still awaited. Chemical Business posted a share of 11% to the revenue from operations. At the macro level, domestic markets remained dampened with slow growth and delay in the take-off of several projects. However, with a stable domestic economic outlook, the pipeline is showing some encouraging trend. Going forward, Tata Consulting Engineers will continue its focus on large accounts in the domestic and international markets. TCE as an organization is well poised as a holistic, integrated solutions provider with concept to commissioning services. Large accounts help leverage this capability and maximize utilization of resources and potential.

Tata Consulting Engineers met with success in winning some key large projects in the Infrastructure and Power sectors. In the year ahead, the business development focus will be on more such large accounts which provide scope for customers to fully benefit from TCE's integrated portfolio profile.

New initiatives planned

The year 2014-15 will look at more operational initiatives to drive international market penetration and strategic large project acquisition. Aligned to this is an enhanced focus on project risk, control and project management. Apart from the organic growth, the company is proactively assessing and evaluating non-linear growth opportunities in selected sectors and geographies. Aligned to the needs of our existing markets across Africa, ME and India, the company plans to develop Urban Transportation business sector, to position it well for growth in Rail and Metros verticals.

Operational efficiencies gained through integrated systems and enablers brought about efficiencies in operations, projects and knowledge management . Going forward, knowledge and intellectual property management will be a key focus. Knowledge when effectively managed paves the way for innovation that helps build up the intellectual property within the organization. Effective knowledge management ensures that the company provides value engineered design and solutions to clients that are specific to their needs and of high quality standards. Tata Consulting Engineers will leverage its strong design and engineering know-how and 52 years of innovation across various disciplines and sectors to provide innovative better solutions for customers across the globe.


ENGINEERING WITH
!MAGINATION

Engineer. Imagine. Innovate

Tata Consulting Engineers thrives on its technical capabilities and has tapped this potential to provide value to customers. This is the premise for establishing a culture of innovation within TCE. Perfecting past knowledge and recapitulating this expertise is engineering. Using earned expertise in engineering and by applying it in imaginative ways to solve contemporary technical problems is engineering with imagination. At Tata Consulting Engineers, design engineering is a combination of imagination and engineering., Imagination manifest in creative solutions is innate to engineering design. When imagination procreates to provide value it becomes value engineering. Value engineering, when it is a first of its kind, translates to innovation.

Innovation cycle

Tata Consulting Engineers' initiatives in cultivating a climate of imagination and innovation are primarily driven by customer requirements and a drive for value additions to customer. The company provides engineering and project management solutions and has a large concentration of in-house engineering talent. The approach to innovation originates in creative solutions provided to customer demands. At TCE, the pursuits of innovation are more a manifestation of achieving customer delight through out-of-the-box thinking. Using imagination and engineering skills, we delight our customers. Innovation just happens.

Large concentration of in-house engineering talent,
Empowerment of teams to provide innovative solutions,

Introduction of Technology function to explore new knowledge & build a technology organisation

Knowledge management & Document management systems,

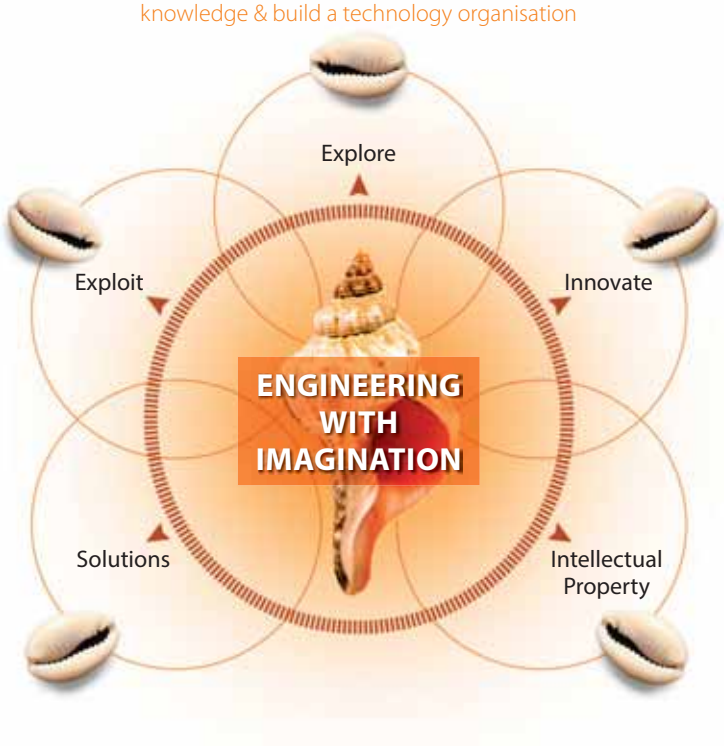
Project management systems, solutions database tools to exploit existing knowledge

Value engineering

3D-5D design, simulations as value additions

New delivery models to suit customer.

Creation of dedicated centre in an SEZ on a KPO model



Risk assessment framework ensures risk-free innovation to benefit customers,

Initiatives to build a technology organization,

Reward & Recognition - Innovision – (company recognition), Tata Innovista (Group - level. Program)

Applications submitted for patent on processes & technology

Solutions

Our engineering solutions and services bring value to customers by way of cost effective solutions to technical and environmental compliance related challenges. In the process of problem solving, new knowledge is created.

Exploit

Knowledge created is managed internally and our teams leverage existing technical knowledge that has been well documented, with codes and procedures continuously updated using IT- enabled systems. Our prowess in key sectors, have helped build new knowledge and expand into new sectors. It covers both explicit and implicit knowledge.

Explore

Recapitulating existing knowledge, TCE strives to explore new possibilities in the solutions delivered. Re-applying existing knowledge and exploring in new solutions gives birth to innovations. Tata Consulting Engineers has introduced a new service offering 'Advanced Technologies'. This service stream combines our inherent core-engineering skills with complex IT technologies to benefit customers.

Innovate

Our teams are empowered to optimise tacit knowledge and work with customers to provide the best possible solutions. A structured process for innovation involves scanning of ideas within teams and transitioning them into innovations, applying the risk framework and refining them to an executable process. On such a structured path to innovation, Tata Consulting Engineers has created some first of its kind processes and technical breakthroughs.

Intellectual Property

Over the years, the company has built on its inherent strengths and optimised knowledge to benefit customers. Going forward, Tata Consulting Engineers aims to focus on making proprietary some of its innovations In the year 2013-14, the Company has filed applications for three patents. With a new Technology vertical set-up, managing knowledge, innovations and intellectual property will be key focus areas.

Creating a Climate for Innovation

Exploiting existing knowledge and imagining new possibilities for customer-centric solutions are the elementary steps to breakthrough innovation. A climate for innovation can be created by letting knowledge thrive and effectively managing knowledge. Tata Consulting Engineers is focussed on managing internal knowledge which is a gateway to the creation of new knowledge. The company's knowledge management focus takes a three pronged approach:

a) Managing internal knowledge

Creating knowledge repositories through structured documentation systems and creating project specific reports that can be managed through IT applications help to build a strong knowledge bank. This helps increase productivity and better resource utilisation as inherent knowledge is completely leveraged.

The online Knowledge Management System and Document management system can be updated and accessed by all project teams across geographies providing seamless access to internal knowledge

Rhythm, a web-based portal, was launched with specific applications to assist project teams and continuously update project reports, design engineering standards and codes.

The valuable learnings from the new assignments & completed projects are captured in the form of Job Completion Reports (JCRs).

The Technology organization members such as. Discipline Heads facilitate in tapping into the organizational learnings and experiences for other projects.

b) Providing scope for creating and assimilating new knowledge

A Technology vertical was created last year to focus on managing knowledge, tracking and participating in technological developments, innovations and intellectual property management. A career progression path in the technology stream has been chalked out for the large pool of latent talent within the organisation.

A Knowledge Lab section was created on the website to show-case publications of research, articles and whitepapers by experts in prestigious journals.

c) Rewards & Recognition

Technology experts are given opportunities to present at various national and international forums.

Whitepapers, case studies and journal publications by technical experts ensure research and development in the subject matter and build a repository of technical knowledge. It also provides a platform to calibrate as well as show-case internal expertise with the best in the industry.

The official blog of TCE, 'Tech Speak' was launched on the website to showcase whitepapers, case studies and provide a forum for interaction.

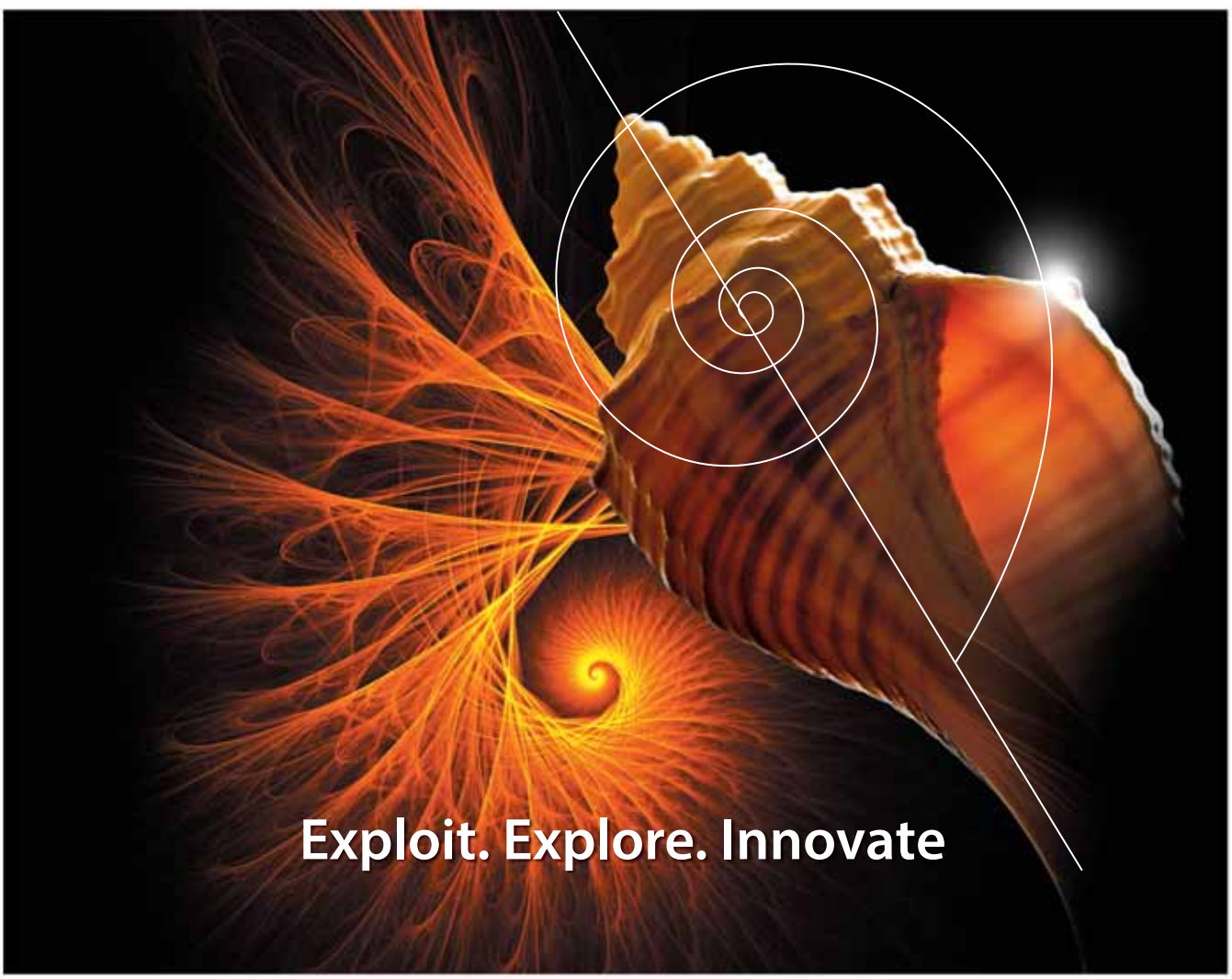
Rewarding innovation occurs both, within Tata Consulting Engineers, and globally at the Group level.

Innovision: Tata Consulting Engineers conducts an annual innovation contest to identify and recognise innovation in processes and technology. Each year several applications are received from employees. Winning entries are rewarded at the TCE Annual Day Celebrations.

Tata Innovista is a global, Group level recognition program. The short listed entries from Innovision are submitted to the Group program under various categories.

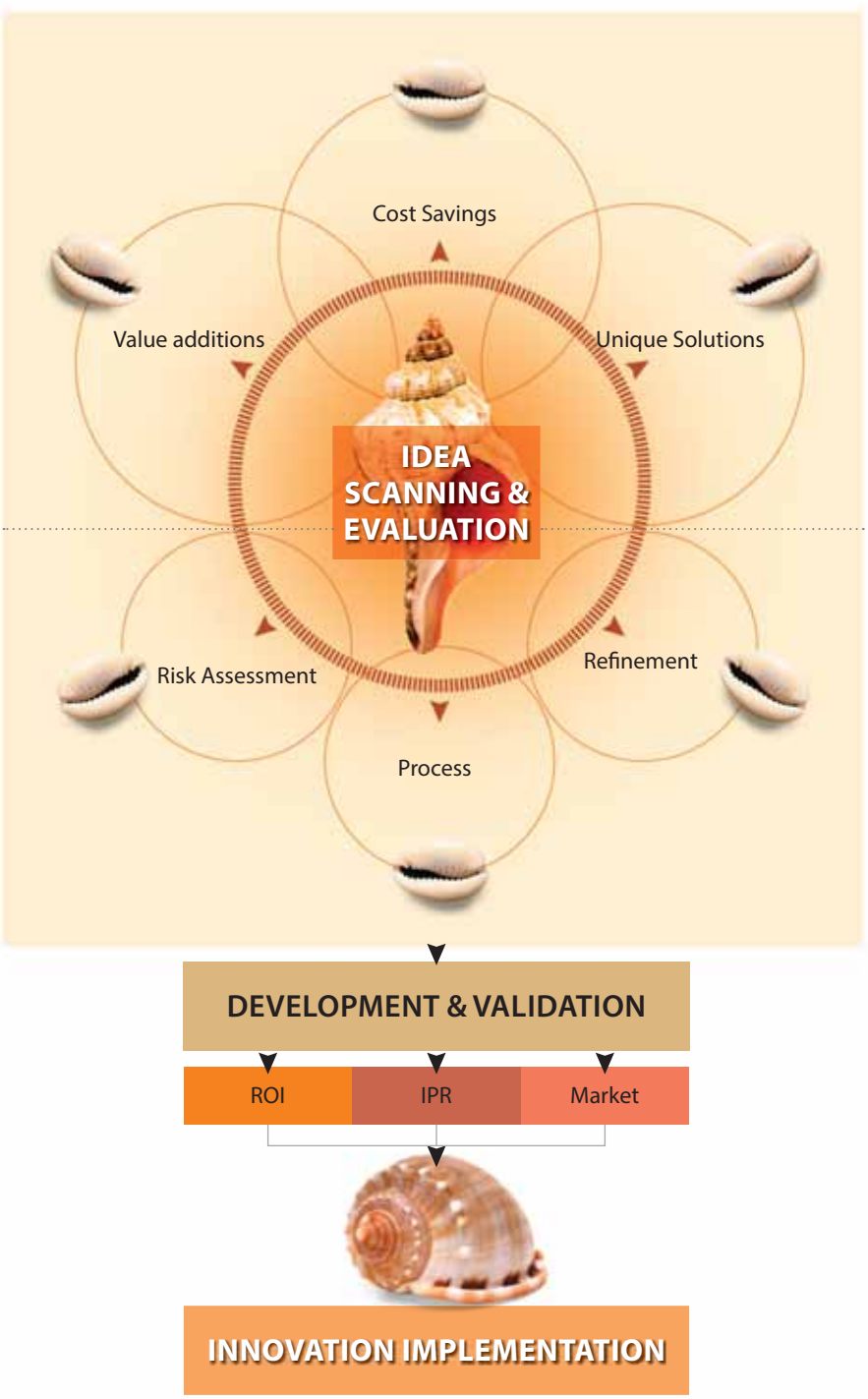
TCE received the Tata Innovista 2014 award in the category 'Promising Innovation – Core Process' for a new approach to sea-water based Flue Gas Desulpurisation systems in coal-fired thermal power plants.

In the year 2013-14, Tata Consulting Engineers submitted applications for acquiring patent for some of the key technology innovations.



Innovation need not be Eureka moments or a sudden epiphany to create something new. Tata Consulting Engineers has a culture of creating something new each time a challenge is posed. Several solutions to customers have been breakthrough solutions, and a first of its kind. In the year 2013-14, the company took several initiatives that were new ways of doing things to add value to customers.

Innovation Management



Business innovation

The company streamlined businesses and continued with the business process reengineering efforts that began last year. The strategy to move to a Business Unit –centric operations based on key sectors helped to align resources and activities such that business operations became more focussed to customer centricity and resource optimisation relevant to each sector. Delivery centres are now optimised to work in a collaborative manner. Value additions to customers are delivered by working seamlessly across geographies to provide cost efficiency.

The Company took a collaborative approach to business development and service delivery through strategic partnerships. The Power business unit collaborated with Korean EPC players, tapping their capabilities to complement TCE's core engineering knowledge to serve several customers in Africa, Middle East and APAC region.

Service innovation

In a new digital era, engineering processes are being rendered more predictable through the use of core engineering and complex IT technology. Tata Consulting Engineers introduced a new service stream, Advanced Technologies. Through simulations and virutalisation, core engineering processes are being delivered seamlessly across geographies. 3D, 4D, simulations are used to deliver Project, Plant & Product Lifecycle Management Services, engineering design outsourcing services etc. Built around a Knowledge Process Outsourcing model, the company established a separate office in a Special Economic Zone (SEZ) to provide seamless services specific to engineering design. This brings about a great deal of cost efficiency to TCE's international clients. This is an innovative service stream as customers get the benefit of core engineering solutions delivered using high end IT applications and delivered seamlessly across geographies.

Technology Innovation

Technology is managed through structured knowledge management processes and systems. A repository of tacit and explicit knowledge is built and updated. Project management systems and project completion reports record and store the tacit and explicit knowledge. Design documents, standards and codes are created and managed as per ISO:9001 procedures. IT systems enable easy access to this knowledge base. Tacit and explicit knowledge is managed by exploring new opportunities in value additions and innovation.

Value addition

Tata Consulting Engineers' knowledge management methodologies open the doors to innovation through managing 'value additions' in a structured manner. The technology value additions are systematically compiled and explored for its merits. The Technology function assesses these 'value additions' in process and solutions to explore possibilities of transforming them into innovation in a new scenario.

Celebrating Innovation – INNOVISION 2013-14

Innovision is Tata Consulting Engineers' in-house contest for encouraging innovation in process and technology. Applications on innovation are submitted by employees and reviewed by a jury comprising senior leaders in Technology and Business. The selection criteria is focused on –

Novelty | Value Additions | Repeatability

Top five winning entries are awarded for innovation. The best entries are also selected for entry to the Group level Tata Innovista Awards for innovation.


SOME VALUE ADDITIONS &
INNOVATIONS IN 2013-14

Optimisation Of Deep Excavation for Coal Receiving System in a thermal power plant

A coal-fired thermal power plant was faced with the problem of selecting an appropriate & safe methodology for civil construction of deep underground units of the Coal Receiving System, with soft sub-soils and high ground water table. The constraints of tight construction schedule, hazardous site conditions and the need for cost optimization without compromising on safety was a challenge for TCE. With loose sand and ground water level within 1.0 m from surface civil constructions involving deep excavation was risky and unsafe. TCE developed a scheme providing multi-level braced steel sheet pile wall along with multi-stage well point dewatering system for the underground works. TCE provided analysis, design calculations, report, drawings and methodology for execution at site, technically justifying the solution. The project was successfully executed with cost reductions of 75-80% of original cost estimate. The solution also saved execution time and civil works were managed in a safe working environment within the stipulated time.

Modified design of temporary oven protection shed for a coke oven battery plant

Tata Consulting Engineers is providing Project management and Construction management consultancy to a steel major in Orissa. The protection shed design for the battery plant was modified to facilitate a parallel construction and second stage concreting of SC Pinner track support. This solution of parallel construction helped with faster stamp charging pusher machine track erection. In real terms, the solution saved project run-time which translated to savings in project costs. The challenge was in the extensive modification of an existing design which had to be done within stringent safety and compliance requirements.

Coal Blending

A key innovative process in the blending of coal to bring down the cost of generating power in coal-fired thermal plants was a landmark solution that paved the way in managing coal, a key raw material in super critical thermal power plants. This solution optimises power generation to make it more cost efficient and in line with environmental compliance requirements. Tata Consulting Engineers worked with the client and partners to provide this innovative solution.

River Ganga Action Plan for "National Mission for Clean Ganga by 2020 – Recommendations & Model document to serve the entire project

This prestigious project relates to the stretch of the river Ganges at Allahabad and Kanpur. The features recommended are novel ideas for a typical sewerage system -

- Recommendations for use of existing large size sewers by various internal lining methods
- Considering Trenchless method for difficult open excavation in congested lanes of old city
- Use of precast RCC manholes in congested lanes for quick installation
- Reduced the cost of road restoration work by 30% through strategic way (top width of road cut plus 30cm on both sides and reinstatement of CC/Bituminous/BOE roads based on actual road length as per survey details)
- De-silting of existing sewers in Kanpur for reuse which brought about 80% cost savings
- Survey of existing large size sewers (mains) by opening manholes and relevant observations; About 25-30% cost reduction was achieved by rehabilitation of existing sewers with internal lining method
- Detailed cost estimation for sewage treatment plant (STP) units based on preliminary design
- Preparation of tender for STP on DBO basis with alternate treatment technologies - stringent review and approval by international experts,
- Social and Environmental Study for the sewerage project and financial analysis and tariff study for the entire project

TCE documents were reviewed by NRCD, World Bank, FASEP, NGRBA, IIT Roorkee, GPCU-UPJN-Lucknow and approved in the steering committee meeting at Delhi

TCE provided technological and innovative solutions in various areas which saved capital cost, prevented pollution during execution, saved energy costs, ensured faster construction and execution harnessing project delays and the pollution of Ganga River. Several safety measures were adopted and resource conservation measures during construction and in O&M while implementing sewerage scheme, conservation of water for use of dewatered sludge, treated water etc. The project activity was undertaken with no hindrance to the general public.

Long distance ash slurry transportation for Mine Void Filling

Ash disposal from coal-fired power plants, is a critical environmental concern. The Ministry of Environment & Forests (MOEF) in India stipulates 100% ash utilization for all new coal fired power plants from fourth year after commissioning of the plant. MOEF also indicates one of the means of ash utilization is mine stowing. 100% utilization of ash is a tough compliance requirement particularly for a country like India that largely depends on high ash domestic coal for power generation. Tata Consulting Engineers addressed this problem of ash utilization by recommending a long distance ash slurry transportation system through which the slurry was used to fill a mine void. This system is a first of its kind in the ash slurry application for distance of 25 km away from the plant. With this system, the entire ash from the power station can be transported into the mine void.

The solution manages the ash disposal as per environmental stipulations and additionally serves as an environmentally friendly alternative to using sand to fill the mine void apart from savings in capital and operating expenditures. This system brings a new business opportunity for TCE for managing waste in coal-fired thermal plants.

Floating Solar Photovoltaic Plant

Throughout the world, the requirement for clean energy is critical for sustainable growth. A large scale deployment of solar power plants is underway. These plants require a vast expanse of land for installation. Land acquisition is a challenge and a major cause for delay in project implementation. Rising land cost and unavailability of suitable land for installation of such plants is driving the thinking towards installation of solar plants, which can float on water.

TCE has taken the lead to develop an indigenous floating solar photovoltaic (PV) plant design. This solution proposes use of indigenous, locally available, modular floating solar PV plants that can be .installed on reservoirs and other water bodies having relatively still water.

The benefit of TCE designed plant lies in its simplicity and ease in manufacturing without having limitation on design, wind speed or tilt angle. The structure is easy to install, low in cost and maintenance with maximum utilization of solar radiation in an effective manner as compared to other existing floating PV systems. TCE designed floating system is cost efficient and can be recycled. Typical plant cost would be close to conventional ground mounted PV plants. TCE has filed an application for acquiring patent for this innovative design.

Case Study

Most Promising Innovation of the year recognised at Tata Innovista 2014

Cost efficient process for clean technologies in coal-based power plants

The path to development is paved with a continuous need for power to fuel growth. The good news is that both governments and industries are conscious of this and are aligned to address this issue – the governments with stringent regulations and the industry responding with clean technologies. Coal-fired thermal plants have seen some environmental concerns. The flip side is that coal-fired plants also throws most difficult challenges for innovation in clean technologies and for producing cheaper power. Tata Consulting Engineers (TCE) has flashed the spark of innovation yet again to bring sustainable solutions to its customers, especially in coal-fired thermal power plants. The Company hit upon a process innovation in Flue Gas Desulphurization pertaining to coastal-based power plant.

What is FGD

Flue Gas Desulphurization(FGD) is a clean technology system that separates the sulphur dioxide from the exhaust flue gas of coal-fired thermal power plants. Typically, these systems require sea water or chemicals to absorb the sulphur dioxide. Thus FGDs help reduce the SOX emissions to almost 90 to 95% from the flue gas exhaust and maintain the specified Ground level concentration of SOx within the norms stipulated by various national ambient air emission standards. The extent of regulation for inclusion of FGD systems in fossil-fired power plants varies in different countries across the world. Inland plants typically use chemicals (limestone or other chemicals) to absorb sulphur dioxide, whereas, coastal-based power plants are best benefited by FGD systems that use sea water. This is because sea water's inherent natural property is conducive to absorption of sulphur dioxide. However, such sea water based FGDs require significant amount of sea water and large water intake systems.

Problems and innovative solutions

The commissioning of a power plant whether captive or standalone come with a host of compliance requirements. This is especially true for coal-based power plants. Tata Consulting Engineers successfully retrofitted an FGD system to a completed thermal power plant. This was a breakthrough solution, as the company had to create an innovative process to mange this. Retrofitting FGD systems to an existing facility has many angles to it - the topography of the plant site, the original design that will have to be modified to accommodate the FGD systems' requirements, the additional facility requirements to operate the FGD systems and most important of all, additional capex burden, project commissioning delays and the resultant project cost

over-run. This was the trigger on hand for the Tata Consulting Engineers' team to put on the innovation hat. They put their heads together to create an innovative solution for retrofitting a sea water based FGD system, at minimal time and optimal cost benefit. With a window of twenty-four months, the FGD system was retrofitted and the plant was ready to go on stream completely compliant to environment norms. The process innovation opens up a plethora of opportunities in making coastal-based thermal power plants clean, efficient and environmentally compliant.

Options available for retrofitting of the FGD systems

Retro-fitting a conventional FGD system in a coastal based power plant imposes phenomenal cost escalation and requires time. The use of chemical based FGD is not relevant to coastal-based power plants as the economic advantage of using seawater in coastal-based plants will be lost. The new process innovation provides a solution that is cost efficient in its design and most of all the waste water management is optimal.

The process recommended is a first of its kind with no past references. The new process has implications on inherent systems when the FGD system is being retrofitted. With some modifications , Tata Consulting Engineers successfully implemented the innovative process within 24 months, ensuring huge cost benefits, time savings in plant commissioning, curtailing of project cost escalations and environmental compliances. This also helps in reducing the carbon foot print significantly, when compared to conventional FGD systems. Savings in Capex due to implementation of the innovative process in fitting FGD systems would be to the order of 10 to 20 % and expected savings in Opex would be to the tune of 10 to 50 % depending upon the peculiarities of sites and the projects.

The story of retrofitting FGD systems has many sequels to it. Tata Consulting Engineers' innovative process (economical and environmentally friendly) in FGD systems can be effectively applied to Greenfield, Brownfield and existing coastal -based power plants. Current regulatory compliance mechanisms are more stringent. Presently all countries do not mandate FGD systems in power plants. However, with a greater focus on clean power generation, it is expected that FGD systems would soon be mandated for all coal/oil -fired thermal power plants. The company has filed an application for patenting this technology process.

Tata Consulting Engineers Limited is known for providing solutions that are a first of its kind in various industry sectors that it is present in. This one goes to the sustainability of fossil-based power generation and cost efficient power to fuel growth.

Recognition at the Tata Innovista 2014 for TCE

The Tata Group and Group companies provide a climate for innovation. The annual Tata Innovista is the Tata Group's recognition program to encourage innovation in process and design by the Tata Group companies located in India and across globe. Tata Consulting Engineers was awarded the Tata Innovista 2014 award in the category 'Promising Innovation – Core Process', for projects that are innovative and successfully operating. In the promising innovation category alone, 1,010 entries were received and 43 innovations reached the final round (350entries across categories) of Tata Innovista 2014. Tata Consulting Engineers qualified from amongst the finalists from India and across globe in this category.


BUSINESS
REVIEW

Infrastructure

Highlights

- IT SEZ facility at Rajarhat, Kolkata (Block A & B) - project management services completed with 22 million safe man-hours
- Value engineering services for large US-based engine manufacturer
- Consultancy and project management services for a tractor manufacturing plant for a multi-national farm equipment manufacturer
- Completed the largest dredging project for a major port in western India, ahead of schedule
- Awarded the project for water distribution and sewerage management systems for the entire state of Gujarat
- Water management systems for the states of Karnataka, Bihar, Delhi and Mumbai city at various stages of the project cycle
- Urban development projects for three mega cities along the DMIC corridor - Dadri, Dholera and Ujjain- to commence
- Concept to commissioning services for a cancer hospital for a large private sector enterprise
- Progressed to next stage in the Gujarat International Finance Tech-city which features the country's first district cooling system and largest underground utility tunnel

2014-15 will target the transition to a 100 % digital engineering platform. The focus will continue to be large infrastructure projects as TCE has a proven track record with such projects.

Sector Overview

The Infrastructure Business Unit has an illustrious array of projects that are the pride of the nation and complex in its operations and delivery. The sector offers engineering solutions providing services relevant to integrated development projects. These are typically, large projects with long gestation periods and also multi-dimensional in that, TCE provides expertise that encompasses cross-vertical skills and concept to commissioning services. The year 2013-14, saw success in several such large accounts.

The Infrastructure Business Unit holds pride in playing a crucial role in three major developments under the Delhi-Mumbai Industrial Corridor (DMIC) including a 43 sq km area smart city parcel. The business unit is also engaged in the next stage development of the iconic Gujarat International Financial Tech City (GIFT). Yet another location-specific large project was the water distribution and sewerage management systems for the state of Gujarat. Projects such as these in the Infrastructure space called for a dedicated project office to give the customer the advantage of enhanced services with a dedicated team. TCE set up a delivery centre at Gandhinagar to enable this. By the end of the financial year 2013-14, the company ramped up seat strength at this centre to service such large accounts in the Gujarat region. Going forward, this centre is likely to be developed into a full-fledged delivery centre.

Infrastructure Business Unit clinched more business acquisitions in the water and waste water management vertical. TCE is already providing water management systems for the states of Karnataka, Bihar, Delhi and Mumbai city. The Air Pollution Control Project is also a landmark project carried out by the Environmental Sector of IBU. The Quality Council of India has accredited TCE for Environmental Impact Assessment Studies for several sectors.

The Marine Ports & Harbour vertical inked an agreement as part of a consortium of international agencies for design and project management of a large ship repair facility in south west India. The Infrastructure Business Unit looks towards more such joint efforts in other verticals, especially in the international markets.

The year 2013-14, was good on the strength of strong order books from the previous years and the first two quarters. However, the impact of the slow economic growth in emerging markets curtailed the rate of growth in the infrastructure space. The dynamics of large infrastructure projects in emerging and other overseas markets called for a more targeted, sector-specific and geography -specific approach. The future marketing initiatives will be re-calibrated to take on a more focused approach in the international markets. The plan ahead is to address different regions of the Middle East & Africa for specific verticals of the Infrastructure Business.

From an operations perspective, the incorporation of IT-enablers for delivery continued through the year. 2014-15 will target the transition to a 100 % digital engineering platform. Seat strength was ramped up in readiness for the turnaround expected ahead, especially in the domestic markets. The focus will continue to be

large infrastructure projects as TCE has a proven track record with such projects.

Performance overview

The year 2013-14 was good based on strong order books of previous years. The Infrastructure Business Unit (IBU) contributed to 17% of the total revenue from operations. With a strategy to target markets aligned to individual verticals, the BU expects an increase in business acquisitions of 20% over the previous year in 2014-15.

Outlook for 2014-15

In the last year, macro-economic dynamics and bottlenecks in several infrastructure projects dampened overall growth in the sector in terms of new business. In the year ahead, the opportunities in the Infrastructure space on account of fast-tracking of stalled projects, is a positive sign for the BU. The Ganga Action Plan initiative and other river upgrade programs planned in the year 2014-15 are possible assignments were the business can leverage on existing relationships for new business. The concept of more smart cities envisaged and the birth of the Telangana state requires capex investments in the urban development space which is an opportunity. The Infrastructure Business Unit was part of the Group companies' defence manufacturing facilities such as empennages for aircrafts, etc. Going forward, the Business Unit looks forward to more opportunities with Group projects in defense-related facilities.

The Japanese International Cooperation Agency(JICA), a Japanese aid agency, has an outlay of ₹15,000 crore by way of overseas development assistance(ODA) for large projects in India. The JICA has in the past disbursed close to ₹2,40,000 crore from through overseas development assistance (ODA) . The ambitious infrastructure thrust by the Indian government to invest over ₹995,000 crore in roads, ports, power, water, Metro rail and dedicated freight corridor projects by 2020, combined with capital funding opportunities from agencies such as the JICA augur well. Landmark projects are expected to commence including Metros, solar and wind energy projects, large infrastructure projects such as the $ 90-billion Delhi-Mumbai Industrial Corridor (DMIC), the Dedicated Freight Corridor and the Chennai-Bengaluru Industrial Corridor. The Infrastructure Business Unit is already working on some of these projects and hopes to convert these relationships into more opportunities.

Sub-sectors under Infrastructure BU

Built Environment

Urban development & planning, Buildings & manufacturing facilities, Layout & optimisation

Transport

Airports, Marine ports & Harbouts

Water & Waste Water Management

• Water & waste recycling & sewerage systems • Environment & ecology • Geotecnics , tunneling & underground spaces

Power

Highlights

- Business representative appointed in Korea
- Key business partnerships with major Korean EPC Contractors
- New projects in Algeria, Malaysia, Benin, Philippines and Nepal
- Opex projects in South Africa – outage management
- Master Service Agreements with OEMs for plant & equipment related engineering services
- Migration to 3D tools and digitized engineering systems for service delivery
- Submission of application for patent in core process for Flue Gas Desulphurisation systems in coastal-based coal-fired thermal plants.

The Power Business Unit of Tata Consulting Engineers has extensive expertise in engineering related to power generation, transmission and distribution, renewable energy and hydro power projects. Thermal power generation capabilities include large scale super critical thermal power plants. Tata Consulting Engineers services come with innovative solutions and value additions. This is the result of years of expertise and assimilated knowledge which has helped the company gain a leadership position in engineering consultancy in the power sector.

Tata Consulting Engineers took several steps to stay resilient and competitive in tough market situations internationally and in the domestic region.

i)The strategy to take a partnership route with EPC players was driven through aggressive business development in the Korean region. EPC firms in Korea operating in the Oil & Gas sector were pursuing international contracts in the power sector. The gap in core engineering knowledge relevant to the power sector

TCE's past experience in the engineering of super-critical thermal power plants and the innovative solutions provided was a starting point which gained credibility in the Korean market. TCE has strong core process knowledge in the Power generation technologies but the value additions in terms of economical and environmentally-friendly solutions makes the difference.

was being outsourced to American, European and local Korean engineering firms. TCE's past experience in the engineering of super-critical thermal power plants and the innovative solutions provided by them in their approach to engineering was a starting point which gained credibility in the Korean market. TCE's USP was that their deliverables matched the quality standards of engineering firms from Europe and America and they also met the expectations of the Korean EPC Contractors in being flexible while adapting to the requirements of the EPC contractors. The breakthrough came with the first successful partnership with Daewoo in Korea. The strategy worked well and TCE became the preferred partner for leading EPC players such as Samsung C & T, Daelim, POSCO, GS and SK. The combine with EPC players brought about several projects in the MENA and South East Asia region. TCE has strong core process knowledge in the Power generation technologies but the value additions in terms of economical and environmentally-friendly solutions made the difference. TCE also used a unique delivery model with onshore-offshore combine and documentation in French and English as was required by various clients. Another important aspect was bridging the cultural gap between the Korean teams and the Indian TCE teams. Culture orientation workshops and team building sessions at TCE in India strengthened such relationships with the Koreans. This has served as a unique precedent for TCE in building a collaborative relationship for success in new emerging markets. Thus even in a world economy mired by slow growth, TCE managed key businesses in the international markets.

ii) The strategy of focusing on services in opex projects for OEMs was yet another initiative that opened new avenues for TCE. Maintenance Repair & Overhaul (MRO) services for plant and equipment include de-bottlenecking in operations, improving plant efficiency and life cycle, modernization, etc are some of the services. The stringent regulatory compliance requirements for power plants and TCE's innovative solutions in providing cost effective solutions that help plants to comply with regulatory norms and reduce negative environmental impact has provided new opportunities. Modernization and retrofitting processes and systems for upgrades in regulatory compliance is an area that TCE has been successful in.

iii) The regulatory requirement mandating a Flue Gas Desulphurisation(FGD) system for a new power plant after completion, posed a unique problem of cost overruns and project delays for a coal-fired thermal plant. TCE provided a core process innovation that maximized the advantages of a coastal based location by providing a cost effective process intervention which provided compliance at huge cost savings. This process won the Power business recognition at the Tata Innovista Awards 2014 for Promising innovation-Core process. (Refer page….for details). An application was submitted for a grant of patent for this new process innovation. FGD systems are not mandated in all countries for coal-fired thermal plants. With greater focus on environmentally-friendly power generation, it is expected that FGD systems will become mandated for coal-based power plants. TCE has innovative solutions that are cost effective and environment friendly in such an eventuality and foresees new opportunities in efficiency in FGD systems.

TCE made concerted efforts to harness and build intellectual property in the Power sector. Going forward, TCE will explore more

such opportunities to build on its strong technology base.

ii) IT-enabled services combining core engineering process know how and IT tools from the Advanced Technology stream to provide engineering services on an advanced digital platform was set up in 2013-14. Several engineers were provided with training and orientation in 3D -4D delivery platforms specific to the power sector.

Tata Consulting Engineers will continue to look to new service opportunities to provide value for its customers. In a scenario with changing needs, the Power business sector continues to re-package its services as per clients' requirements and environmental stipulations.

Performance overview

The year 2013-14 was an eventful year in the international markets for the Power Business Unit. Despite a slowdown in growth in the emerging markets. Some tactical approaches helped build the order books. Geo-political uncertainties and a slow turnaround in the global economy kept the business outlook subdued in the MENA regions, which were TCE's key markets. In the domestic markets, the majority of power plants are coal-based thermal plants. In FY 2013-14, linkages in coal supply, funding of power projects, stalemate in clearances for new plants and the plight of transmission & distribution companies were some of the challenges faced by the power sector. In this backdrop, domestic growth in the power sector remained stagnant. The year 2014-15, however, is expected to see several stalled and new projects to take off following anticipated policy reforms and clearances. The momentum is expected to pick up around the last quarter of 2014-15. In this scenario, the Power Business unit's contribution to the revenue from operations was around 25% in the year 2013.14, with about 50% of this coming from international markets.

Going forward, the Power Business of Tata Consulting Engineers has built its credentials both in the international and domestic markets. The company hopes to take its expertise to the next level. With a favourable political climate, TCE expects to be part of key power projects like smart cities and supercritical plants, renewable energy and hydro projects. The company will continue its focus in the international markets bundling new service lines related to the Power sector.

Power Business

Segments	Services
Thermal Power Generation(Coal, gas & fuel)	Power plant design, planning, steam turbine design, coal blending solutions, boiler optimization solutions, environmental solutions for coal fired plants.
Renewable energy	Foundation design and fatigue analysis as per CFBFIP model building code machine, power evacuation system design and wind resource assessment, due diligence and remaining life assessment studies. energy yield studies and microsting, Review of solar radiation analysis.
Hydro Power	Hydropower stations –renovation & upgrades, engineering services for hydraulic design, water hammer studies, penstock designs, flood analysis and spillway designs. Analysis of gravity dams and dam safety reviews, designing new dams and strengthening and rehabilitation of old dams
Transmission & Distribution	Power transmission and distribution for urban electrification and extension, rural electrification, distribution infrastructure planning and development for townships, captive power plants within large facilities, substations, modernization of existing power lines in line with country specific standards.
	Outage management, power evacuation system design, designing GIS substation, switchyards, determination of voltage level, number of lines with due consideration to redundancies, need for shunt reactors, engineering of protection of lines, bus bars, SCADA integrated numerical relays, ABT metering scheme, power line communication system for protection signaling and data transfer to load dispatch centre.

Construction

Highlights

- Achieved year-on-year overall growth in revenues of about 22% over 2012-13
- Accounted for about 34 % of overall accrual in 2012-13
- Acquired several high value projects in the domestic and international markets in the Power, Water supply & sewerage and Mining verticals
- Completion of the power project for Rajasthan Rajya Vidyut Utpadan Nigam, Chhabra; Unit I dedicated to the nation by the Chief Minister of Rajasthan State.
- Introduction of IT tools and systems to strengthen delivery excellence across the stages of the project lifecycle
- Successful completion of projects with creditable safe man-hours

5m Column casting in single lift without starter for 1450 nos of columns –

- Reduced casting cycle time by 40%
- Processes simplified thereby reducing man-hours and effort; time reduced from 81 Hrs to 38 Hrs
- Better quality as the casting is monolithic without construction joints
- Direct cost saving of ₹1.18 Crores

The Construction Business Unit (CNBU) works across all sectors to provide construction management and safety management services. The Business Unit works with other businesses to provide sector specific services in construction management, project management and all safety-related services. Strong credentials in the construction business and in-house talent has helped the CNBU's revenue streams account for 30 to 35 % of overall sales revenues of Tata Consulting Engineers. The CNBU undertook an array of standalone construction management services across sectors from IT facilities, farm equipment manufacturing outfits, steel plants and power generation facilities. Apart from standalone construction projects, the business was successful in extending client relationships in other Business Units to provide construction management services. This two-pronged strategy of serving as a horizontal business for all other business sectors and clinching exclusive construction projects has worked well for the business. Clients get integrated and holistic solutions from design engineering to construction management and commissioning support. The value addition includes experience in working with multiple partners and seeing through concept to actualisation in a responsible manner.

The year 2013-14 saw the successful commissioning of several projects, the most significant being the prestigious coke oven battery plant # 11 for Tata Steel with CNBU providing the entire gamut of services including refractory supervision. The CNBU focuses on safety as a priority and many of the projects were delivered under strict safety norms. However, the prospects for the year 2013-14 due to a slow growth environment in the domestic markets with most sectors caught in the slow down. Weak demand conditions resulted in a very competitive environment and softening of pricing, denting profitability. The international markets posed additional challenges, especially in South Africa where CNBU has significant business interest, with governments increasingly resorting to protectionism by way of regulations like the BEE among others. This poses a severe challenge not only for TCE but other operators across the value chain. TCE's CNBU has at a greater focus in the Middle East and African regions. The strategy to seek partnerships with engineering and consulting organisations established in these regions will help the business leverage the strength of its engineering expertise and local presence of its partners. Additionally, the CNBU will appoint local representatives and also work with liaising agencies to drive business development in specific geographies. Thus, a combination of measures and strategies are being rolled out to increase growth. This strategy is poised for positive results with TCE's CNBU being considered




for high profile projects in the Middle East, such as a causeway extending 50 kms end to end. Extensions of existing relationships with other TCE Business Units for construction management services for world-class plants in fertiliser and cement projects in Africa, are expected to fructify. Tata Consultancy Services' (TCS) expansion plans in the city of Trivandrum also throws up new opportunities as TCE has frequently worked with the company in the past. With such significant projects slated to take off, the outlook for the business looks positive.

In the financial year 2013-14, the CNBU's contribution to revenue from operations is at 34%. The year ahead will see a greater thrust on new business in the regions of Africa and Middle East. The challenge in terms of talent management and resource mobilisation will continue to be dealt with strategically. The business will also continue to uphold its safety standards and work relentlessly in sensitizing stakeholders and partners in safety and meeting compliance requirements in line with international standards. The Construction Business Unit continues to maintain a good track record in its delivery and safety commitment. This will be the prime focus to delight customers, going forward.

Chemical

Highlights

- World's largest oral care plant for a multi-national corporation engineered by the Chemical Business goes on stream
- Successful completion of engineering for India's first currency note paper mill
- Successful commissioning of Offsites / Utilities for Naphtha Hydro Treating (NHT)/ Continuous Catalytic Reforming project of BPCL, Mahul refinery
- Project management services for Urea / Ammonia plant in Nigeria
- Completion of research on waste management in aluminium processing
- Significant business acquisition for providing EPCM services in manufacturing of Polyethylene terephthalate in Nigeria
- Services extended to complete Asia's largest decorative paint factory, to reach optimum capacity

The Chemical Business Unit (CBU) of Tata Consulting Engineers provides engineering solutions pertaining to the process industry covering Oil & Gas, Fertiliser, Cement, Chemicals & Paints, Food & Pharmaceuticals and Pulp & Paper. 2013-14 was a year of mixed opportunities for the CBU. The domestic markets provided moderate opportunities and some key accounts saw successful completion. The international markets opened new avenues in the fertiliser and cement segment. The CBU was the first consultant in the country to work with a government agency for engineering services for a currency note manufacturing facility. The trust and confidence that clients place in the business is evident from several innovative assignments the business has undertaken. For instance, the waste management research in aluminium processing is a one-of-its kind project that the CBU was entrusted with. The CBU is also currently engaged in a coal de-ashing project which is expected to result in breakthrough engineering solutions and technology development for efficiency in coal-based power generation. The resultant technology has far-reaching implications in reducing the environmental impact due to the usage of coal. The outcome of this research will also be applicable in the iron making process where coal is used. Such process engineering is the hallmark of the Chemical Business Unit and TCE as a whole.

The Chemical BU undertook some initiatives to ramp up customer support by deploying CBU teams across various locations. The distributed delivery model provides greater customer proximity in locations relevant to the business. The CBU is also targeting to transition to 100% adoption of 3D platforms. This ensures greater predictability for customers and accuracy in engineering deliverables and material management. COMOS integrated engineering platform using intelligent P&ID facilitates smart plant engineering systems that increase productivity and accuracy. Such smart IT applications combined with core engineering and process knowledge provide great value in engineering solutions. The CBU will focus on greater skills training in 3D and 4D solutions for optimum efficiency.

Several action plans were put in place in 2013-14 to drive growth. A targeted approach to business development in the international markets in relation to key verticals met with breakthroughs in the petrochemicals and fertilizer sectors in the MENA region. Oil & Gas refining in the domestic sector remained passive with policy reforms pertaining to public sector undertakings remaining in a work-in-progress state. The BU offerings will be mapped to specific geographies with growth potential for large and integrated assignments that can fully leverage TCE's capabilities. The region-specific approach strategy for each vertical in the business is designed to leverage existing relationships and expertise to make greater inroads as lead consultant. The strategy in the Middle Eastern markets will take a partnership approach by partnering with EPC, multi-national and local players established in the region.

Performance Overview

The CBU's business acquisitions in the year 2013-14 in the international markets was very positive. The business accounted for 11% of revenue from operations in the year 2013-14. The Chemical Business targets a growth in revenues to the tune of 25% over the previous year in the year 2014-15. The BU has put in place a strong business development team to focus on targeted markets. With high-end IT systems in place for smart engineering solutions, the Chemical Business Unit hopes to delight its customers and take giant strides in the international markets of Africa and the Middle East.

Steel, Metal & Mining

Highlights

- Commissioning of 2x0.7mtpa Dry Quenching Coke Oven plant for a steel major
- Commissioning of 4060 cum Blast furnace#5 at Rourkela
- Association with Central Mine Planning & Design Institute Limited (CMPDI) a Mini Ratna enterprise of Government of India enterprise in National Reserve estimation of coal bed methane(CBM)
- Successful and safe dismantling of old blast furnaces for a steel major opened new business avenues in steel plant upgrades;
- Associated with a Tata Group steel major in R & D projects
- Entry in aluminum smelter plant power system for enhancing reliability effecting better pot line operation with minimum production loss for an aluminum plant
- Working in collaboration with ULCOS, conglomerate of global giants in break-through steel making technology

The Steel Metals & Mining(SMM) Business had a mixed bag of opportunities and challenges in the year 2013-14. The year had a notable success for a base metal and mining beneficiation project in South Africa and Ferro-alloy plant in the Middle East. The SMM business continued to build on its strengths and leverage expertise across the verticals in the sector. This helped reinforce the SMM business' position as a key player in the sector. Recent experience in partnering some of Indian steel majors' project implementation in the core technological areas of blast furnace, coke ovens and rolling mills placed the business unit's capabilities relevant to client requirements. Some key strengths that the SMM BU has built up over the years comprise -

- Relationship with international clients
- Initiatives within the organization for a greater thrust on Technology
- Large pool of skilled engineering man-power
- Mobility of resources and customer support in wide geographical spread – India and outside
- Mine planning and design engineering for infrastructure and utilities for mining projects for different ferrous and non-ferrous ores, across the globe.

Amidst several positive conditions within the organization the prevalent macro economic conditions in the domestic and international scene put pressure on growth and business acquisition. Socio-political challenges, mining restrictions and clearance stalemates, capital funding challenges in the private sector and a sluggish investment climate dampened new business opportunities in the domestic markets. Large public sector investments in the steel, metals and mining sector as an opportunity can fructify with associations and partnerships. The SMM business will seek such opportunities and build a collaborative approach to make inroads in the public sector projects. The specialized nature of the sector such as core process expertise related to steel making, mineral beneficiation, etc. also renders talent acquisition a major challenge.

On the international front, successful projects delivered in the past hold the SMM business in good stead. However at an operational level, dynamic growth in the sector poses to be a challenge due to several reasons. The sector in the overseas market is dominated by established International consultants including China. Typically, SMM projects are extremely complex in nature and involve specialized process knowledge. As such, these projects come with stiff contractual obligations. Working through the dynamics of the land to deliver a complex project overseas is a challenge even as past experiences give an upper edge to TCE in terms of engineering and design standards.

Performance & Outlook

Indian economy is poised to grow at an estimated rate of about 5.5% in 2015. Development, reforms and infrastructure are perceived to be ready to take centre stage. With the economy expected to return stronger growth, steel demand is expected to be higher at around 5% in the year 2014-15 and potentially around 10% in 2015-16. Some of the primary levers of demand growth are: Rural demand, Investment planned in road sector, Indian Railways – a key contributor to steel demand in the country, automobile and power sectors demand for specialized steel and refocus on manufacturing.

Worldwide sluggish demand and overcapacity in the steel industry have depressed steel prices. Softening prices have affected investor sentiment. The industry has to raise capacity utilization rate for the sector globally from below 80% to more than 90% to remain profitable. Regions to experience faster steel demand growth will be India, Brazil, Russia and MENA (the Middle East and North Africa). As Africa becomes increasingly urbanized, the landscape is expected to completely shift to emerging markets. In the minerals sector, emerging markets have effectively accounted for a huge chunk of the global production growth of aluminium, copper and steel in the past decade. TCE will continue to focus business development activities in these growth markets.

Tata Consulting Engineers' Steel Metal and Mining Business Unit will focus on targeted regions for business development primarily in the Africa and Middle East regions. In the domestic markets, SMM will continue to focus on strengthening existing relationships and seek new opportunities. The SMM business' contribution to the revenue from operations is at 9.39 % in the year 2013-14.

The year 2014-15 sales is expected to grow at 35% . The positive impact of a turnaround in the global economy is expected to fructify into actual deals by the year 2015-16, especially in the mining and metals sector.

Action plan for 2014-15:

- Leverage business relationship with Indian steel majors, such as Tata Steel, Steel Authority of India Ltd
- Increase presence in the core technology areas of Iron and steel making through :
  - Consortium formation with EPC provider
  - Engineering assist to technology provider
  - Collaborative working with technology suppliers in break-through/development projects
  - Implementation of engineering projects for Balance of plants associated with technology packages with exposure to the core technology
- Spreading wings in rapid growth economies and where opportunity lies such as Middle East and Africa, in areas of mining and steel projects

Steel & Metals	• Agglomeration • Iron & Steel making • Material Handling system • Environmental Impact Assessments & Control systems • Waste Water Management • Site selection • Feasibility study to Detailed Engineering • Commissioning Assistance.
Mining	
Geological Services – particularly for Coal, Iron and Base Metals	• Preparation of Exploration Scheme • Surface Geological Mapping • Planning and monitoring of mineral exploration programs • Supervision of Drilling • Core Logging • Sampling and sample preparation for analysis • Structural interpretation & modeling • Preparation of quality database • 3-D ore body modeling • Quantitative and qualitative assessment • Classification of Resource / Reserves • Resource Estimation • Preparation of Geological Report • Geotechnical Studies • Hydro-geological studies
Mining	Mining • Open cut and underground Mine Planning • Production scheduling • Selection of mining technology, equipment selection • Haul road design • Mine entry location • Panel layout, ventilation design, • Support plan • Mine drainage • Planning of allied utility services • Financial Analysis Beneficiation & Mineral Processing • Bulk Sampling for beneficiation studies • Laboratory Testing - Coordinating and Supervision • Design of beneficiation scheme • Equipment configuration including auxiliary & infrastructure facilities • Water & power requirement studies • Operation & Manning Philosophy • Plant layout, process & equipment flow-sheets with solid-liquid balance, SLD • Coal washability studies • Capital and operating cost Estimation

Nuclear & Special Projects

Highlights

- Progressing well with the Plant Engineering & 3D Modelling project for Kakrapar Atomic Power Plant 3&4 (KAPP). This also includes Balance of Turbine Island work.
- Progressing with Engineering of Balance of Turbine Island for Rajasthan Atomic Power Plant (RAPP) 7&8
- Inroads into Special Projects sector with Indian Space Research Organisation assignment of Engineering for Second Vehicle Assembly Building
- Special projects to seek opportunities in Defence, Naval, Ship Building Centre
- 100% 3D Enabled services using PDMS, Cadmatic & Inventor

The Nuclear & Special Projects Business Unit (NBU) of Tata Consulting Engineers has worked with various units & Public Sector Undertakings of the Department of Atomic Energy (DAE) in India and has been part of India's pioneering nuclear energy program and special projects with both indigenous and imported technology. The Nuclear business has established strong relationships over the decades with these government entities and also works with the landmark ITER project. This has helped the NBU build capabilities in this sector.

Post the Fukushima disaster, activism on safety concerns around the proposed Nuclear Power Plant sites had slowed down some of India's civil nuclear programs. Similarly issues related to Nuclear Liability Act have hampered the progress on many other projects. However successful commissioning of Kudankulam Unit 1 has shown signs of revival of nuclear program and has reaffirmed the strong commitment of government towards Nuclear Energy.

With a largely indigenous nuclear power program, India has a vision of becoming a world leader in nuclear technology due to its expertise in fast reactors and thorium fuel cycle. Nuclear energy generation in India is largely funded and managed by the public sector. The Govt policy favours nuclear power in India's energy strategy with country aiming to supply 25% of electricity from nuclear power by 2050. The Govt has identified energy security, which is increasingly based on clean and reliable sources of energy as the critical driver of rapid and sustained long-term development. DAE and Nuclear Power Corporation of India Ltd. (NPCIL) have expressed that nuclear capacity through indigenous reactors and reactors with international cooperation would be increased to 17,080 MWe by 2022, from the present level of 5,780 MWe. Augmentation of nuclear capacity both through indigenous and collaboration with foreign partners is possible. Foreign technology and fuel are expected to boost India's nuclear power plans considerably. However, all plants are expected to have high indigenous engineering content.

In line with past practice such as the eight-unit Rajasthan Atomic Power Plant, NPCIL intends to set up 5 more "Nuclear Energy Parks", each with a capacity for up to eight new-generation reactors of 1,000 MWe, six reactors of 1600 MWe or simply 10,000 MWe at a single location. By 2032, 40-45 GWe would be provided from these five. Not only have aggressive targets for more nuclear power been set, the country has also announced a new research centre known as the Global Centre for Nuclear Energy Partnership.

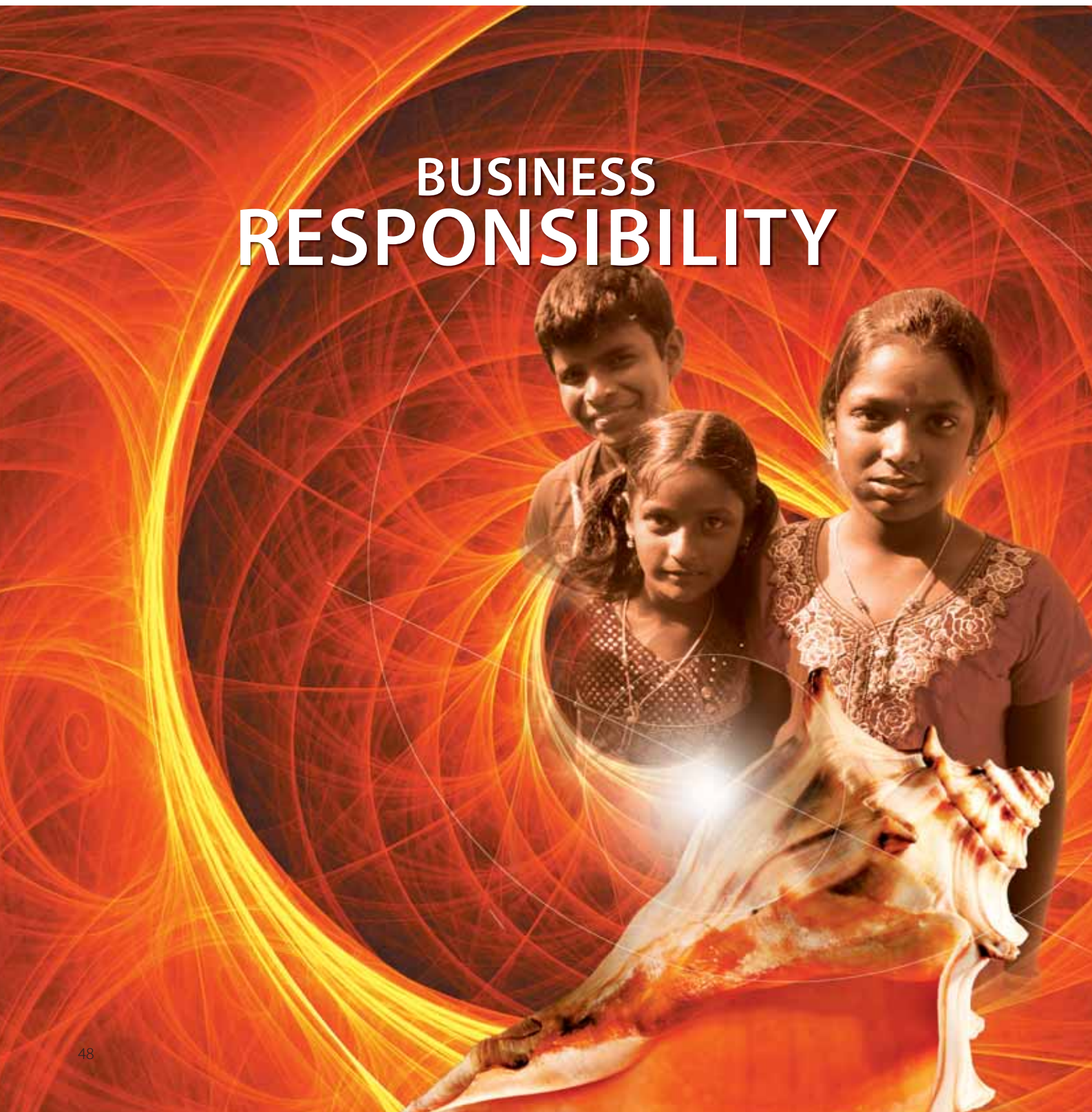
Developments such as those mentioned above ring a positive note for Tata Consulting Engineers and the company is well-placed to play an important role in these projects. The NBU is prepared for the turnaround in the country's nuclear program and has also readied itself in the special projects space to participate in FDI in defence and allied sectors.

What the Nuclear & Special Projects Business unit plans to do in 2014-15

- Leverage Special Projects capabilities to maintain momentum and build a business proposition around Special Projects with focus on Defence, Space and Ship Building
- Continue to be a key player for Engineering Consultancy for Nuclear Power plants by aiming to be part of forthcoming projects
- Exploring newer area of detecting Gravitational Waves, by supporting the mega –science project from LIGO-India
- Engineering services in maintenance and refurbishment of Giant Metrewave Radio Telescopes(GMRT)
- Collaborate with the newly introduced Advanced Technology service stream by leveraging skills of Special Projects & Nuclear to penetrate into the international markets

Outlook

The financial year 2013-14 continued to be a challenging one with economic slowdown adversely impacting both the progress on existing projects as well as prospects of new project investments. However, going ahead, the economic and sectoral outlook is relatively positive. Nuclear and Special Projects business unit will continue to look for new opportunities in the Special Projects stream, exploring more aggressively into the overseas markets and maintaining its stronghold within domestic nuclear power programmes. A key thrust area will be to leverage Special Projects capabilities to maintain momentum and build a business proposition around Special Projects with focus on Defence, Space and Ship Building.


BUSINESS
RESPONSIBILITY

Business Responsibility

Responsible Business

Tata Consulting Engineers' responsible business practices encompass Business Excellence, Regulatory and legal framework, Ethics, Safety practices and Corporate social responsibility.

Business Excellence

TCE is a signatory to the Tata Brand Equity Business Promotion Agreement and follows the Tata Quality Systems as per the Tata Business Excellence Model(TBEM). TBEM assessments and Quality Management System audits are conducted periodically to review systems and processes. In 2013-14, TCE applied for the TBEM assessment process to evaluate and benchmark its quality systems and processes.

Compliance, legal framework & Ethics

TCE has established apex level committees to review and monitor its workings. The Corporate Management Committee(CMC), Audit & Risk Management Committee, Remuneration & Nomination Committee, Banking, Safety, CSR ensure compliance to statutory and regulatory requirements. Engineering designs and solutions are based on established design codes and standards as per the prescribed framework.

TCE follows the Tata Code of Conduct (TCoC) which is the ethical framework practiced across the Group companies. The TCoC provides the framework for ethical and legal compliance required for all business transactions between various stakeholders. The TCoC consists of 25 clauses that spell out the entire gamut of ethical conduct guidelines for Tata employees. Additionally, several policies have been outlined within TCE to drive compliance and ethical practices such as Ethics, Affirmative Action, Whistle Blower, Sexual Harassment, Safety Health & Environment, Corporate Sustainability and Communication, Gift policy, etc. An ethics structure is in place both at the apex and location levels with provision for a women ethics counselor at each location. Ethical incidences are managed in a structured manner and an ombudsman is available for resolutions. Incidents are resolved, reported and reviewed. As TCE has increased its international footprint, the company is in the process of aligning to internationally prevalent compliance norms such as FCPA and the Bribery Act, in a structured manner. TCE is a knowledge-based company and the company's ethical framework also sensitizes employees towards intellectual property protection through confidentiality clauses and agreements. The company will continue to use IT tools to manage knowledge and protect customer confidentiality.

Safety

TCE focuses on all aspects of safety from design engineering to implementation stage, at individual level and at project sites. Documented safety codes and standards are available to employees and the Safety in Design (SiD) manual is accessible to all engineers. Safety training and awareness programs are conducted within the organization and at project sites for both regular employees and contracted workers. Tata Consulting Engineers have built a track record of creditable safety performance which has been recognized and applauded by customers.

Safety Performance 2013-14

TCE offices(6)	
Avg Safety score/month	85.97
Safety training man-hours	1866.5
Safety Audits	4

Construction Site (114 sites)	
Avg Safety index	4.23 (Severity (Dupont) index 2.22)
Safety training to stakeholders man-hours (Tool box/Induction/First-aid/ Job specific)	3,172,458
Safety Audits	1593

Corporate Social Responsibility

Tata Consulting Engineers' CSR activities are conducted under the name TCEndeavour.

The CSR programs are planned and executed to leverage the company's core strengths to benefit society. All CSR activities are driven through four focus areas:

• Engineering • Education • Environment • Community

In the year 2013-14, the company established a CSR Committee comprising:

• Mr. S Padmadmbhan (Chairman) • Mr. F N Subedar (Member) • Mr. J P Haran (Member)

The CSR policy as per Clause 135 of the Companies Act 2013 will be finalised in 2014.

Key Initiatives in 2013-14

Engineering services -Uttarakhand Rehabilitation Program

Tata Consulting Engineers provided engineering and project management services for the construction of Aanganwadi Centres to benefit children. The construction of the first ICDS center at Damar village in Rudraprayag is operational with 21 children attending the centre. The centre, a prefabricated structure with solar lighting system complete with learning aids was handed over to the district administration. The second structure at Pithorgarh is also complete. A third structure is ongoing in Rudraprayag and is expected to be ready by August. These centres will also serve as a notified stable structure to be used as shelters / nodal points in future. The concept behind these centres is to ensure rehabilitation and shelter for little children.

Rainwater harvesting- water tank at Jawhar district

The project for providing water to a tribal village in the hilly terrains of Korchipada, Jawhar district near Mumbai, began in 2012-13. The construction of the tank, complete with hand pump to draw water was handed over to the administration. A committee will be formed in the village for maintenance of the tank. This engineering service will benefit about 50 homes in the hamlet.


Before


After

Affirmative Action

1.Training in Computer-aided drafting

The pilot programs for computer-aided drafting were completed in Bangalore and Chennai for students in the ITI program. The next batch of students from marginalized section will be invited for training in the year 2014-15. An introductory program was also conducted in Pune for 20 students from marginalized sections. This training program is designed as a skill building program to enhance employability. More locations will conduct this program in 2014-15.

2. EAGLE Program, College of Engineering Pune

About 40 engineers from marginalized communities and from a rural background completed the EAGLE program of 10-month duration designed to ready these students for the corporate world. Senior executives from TCE addressed the students to provide insights into the business. The students were also given hands on experience through site visits and corporate visits.

3.Encouraging entrepreneurship

As part of a CSR initiative to encourage Dalit entrepreneurship, the company placed orders for safety helmets from M/s Chandan & Chandan Industries.

Volunteering

Tata Consulting Engineers encourages volunteering by employees to benefit society. This is a prevalent culture at TCE which goes a long way in employee engagement and positive reinforcements. Several of the CSR initiatives in the company are carried out with employee volunteering. The company also participated in the Tata Group's volunteering program 'Tata Engage' to mark the 175th anniversary of the Founder. 330 volunteers from across six locations participated in the activities. This was the most successful volunteering initiative with employees across the Group coming together to experience the joy of giving.

Resource management

	2011-2012	2012-2013	2013-2014
Water consumption in KL	44200	35150	32960

Electricity savings data in units

2012-13	2013-14
4642858	4158796

Paper savings in reams

Type of paper	2011-12	2012-13	2013-14
A3	1728	1408	1206
A4	11240	9480	7896
Plotter roll	4224	3784	2890

CORPORATE INFORMATION

Offices and addresses

Registered Office

Matulya Centre 'A', 1st Floor
249, Senapati Bapat Marg
Lower Parel (West)
Mumbai - 400 013, India

Corporate Office

247 Park
Tower 'A', 4th Floor LBS Marg
Vikhroli (West)
Mumbai - 400 083

Branches – Domestic

Bengaluru
Sheriff Centre
73/1, St. Marks Road
Bengaluru - 560 001

Janardhan Towers
133/2 Residency Road
Bengaluru - 560 025

Pune
Sai Trinity, Central Wing
S. No.146/1/28, Pashan
Pune - 411 021

Delhi (NCR Region)
Green Boulevard
Ground Floor, Tower B & C
Plot No B9 A, Sector 62
Noida - 201 301

Jamshedpur
Pipeline Road, Sakchi
Jamshedpur - 831 001

Mumbai
SEZ Unit No 1103 11th Floor
A Wing Kensington
Hiranandani Business Park
Powai Mumbai - 400 076

Gujarat
Gandhinagar1st Floor Project
Office No. 106-109 B Atria
Complex KH-0 Sargasan Cross
Road Gandhinagar - 382 421

Chennai
6th Floor, SKCL Central Square
C-35, Cipet Road
Guindy Industrial Estate,
Guindy, Chennai - 600 032

Kolkata
Technopolis 5th Floor, A Wing
BP-4, Sector V, Salt Lake City
Kolkata - 700 091

Subsidiaries

Qatar
TCE QSTP-LLC
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Doha, Qatar

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Bankers

HDFC Bank | ICICI Bank Limited | Bank Of Baroda
State Bank Of India | Yes Bank | Citi Bank

Auditors

Deloitte Haskins & Sells
Chartered Accountants

TATA CONSULTING ENGINEERS LIMITED

Engineering a better tomorrow

Corporate Office: 247 Park Tower 'A', 4th Floor LBS Marg, Vikhroli (West), Mumbai - 400 083

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TCE Corporate Communications