A Sneak Peak into the life of the man behind the ₹ 700 crore venture

A Nurtured Dream
The trip to Reality

Piping Reflections
A Glimpse of DEE’s Profile

Pillars of Strength
Force behind DEE’s Success

SPEARHEADS
PRE-FABRICATION

Exclusive: Bansals talk about their vision for the company

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Dee Development Engineers Limited
Blessings from the Heaven

A Tribute to the noble souls whose life was a personification of moral values and divine virtues with a touch of simplicity. The legacy behind the man who made this company possible. Their humanitarian approach, social commitment, tireless efforts have been an inspiration and a guiding force to the DEE family constantly inspiring to reach new levels.
Prologue....

With DEE Piping Systems taking up a high paced growth in recent years we bring to you the driving passion behind this venture. The man Mr. K.L. Bansal, himself an ideal paved a way to entrepreneurship even in dire circumstances. His sincere effort combined with a vision makes DEE stand apart.

He belongs to one of those first generation entrepreneurs of Faridabad who humbly started his journey with a desire to work for a greater cause. With risk taking capability, he seized the opportunity at the right time. The accomplishments itself narrate the entire story of a successful undertaking built over the period of last 32 years. A born leader, keen observer, patient listener, loving husband, caring father and the best friend to his grandchildren. His simplicity and openness will touch your heart and leave you spell-bound.

We are proud to present this extraordinary tale of a life changing individual, who has raised the bar for our society and taken the city of Faridabad to a new Horizon. This magazine will attract you by the way the Bansal’s traversed from one generation to another.

They have navigated a difficult path with patience and resilience to bear the fruit of success which has led us to this day. DEE Horizon is a gift from the entire DEE family to celebrate 60 years of Mr. K.L. Bansal, a man who has been a Legend and a Real Hero.

Gaurav Narang
Business Strategy

“It has been a wonderful experience working and learning with DEE for all these years. The effort put in by various individuals is bearing fruit and now is the time to create new history”
I congratulate Mr. K. L. Bansal and DEE piping systems for coming out with its first magazine.

There was a time when Faridabad was known as Manchester of India. In those times, a lot of dynamic and talented individuals with entrepreneur skills and vision along with risk taking capabilities set up industries in Faridabad. Times however have changed, and very few of those industries have survived due to adverse conditions, stringent laws and competition.

The road to victory demands two basic things, belief and dedication. I applaud Mr. Bansal and his team for their commitment, hard work and dedication which has not only enabled DEE Piping Systems to survive but even grow in such scenario.

I wish DEE Piping Systems lasting success in their present and future endeavours

Mr K C Lakhani

Founder and Chairman
Lakhani Armaan Group
FOREWORD

One of the leading companies under the umbrella of FIA, DEE Piping Systems, is the vision of one man whose venture today speaks for itself. Faridabad is the industrial hub with various flourishing industries speaking the astounding tale of a few individuals who chose to follow their hearts, Mr K. L. Bansal being one of them.

It brings me unfathomable happiness to see new ventures prospering to make a name for themselves and the city of Faridabad which has the potential to be Asia’s biggest industrial centre. The change in mind set and policies will bring new opportunities for upcoming ventures to stabilize and grow bringing more honours to this state.

I would take this opportunity to congratulate 32 years of DEE and 60 years of Mr Bansal who has been a visionary, an inspiration to many who dare to pursue their dream. An astounding tale of simplicity, dedication and hard work which will keep you spell bounded till the end.

I congratulate the company on the occasion of bringing out their magazine and wish the company many more successful years to come.

Mr Navdeep Chawla

President

Faridabad Industries Association
Mr. Bansal is personally known by his name world over for his in-depth knowledge of engineering and manufacturing of piping systems and rated as one the finest technocrats in the piping industry globally. His customer centric approach always put him in the good books of the client and makes the DEE as the first choice for their business needs. He is also of the strong belief that parallel development & growth of its suppliers is the key to the success of the Company. So he has equal concern for its suppliers too and is extending necessary support for their development.

He is not only a successful entrepreneur, but also a strong patron to his employees, from grooming them professionally to making them satisfied human beings by his candid and always helpful characteristics.

Calm as tree in his temperament and soft as silk by his voice, Mr. Bansal is a great human being and has huge passion for the welfare of the society and an innate pain for the poor and down trodden. To fulfil his dreams, Company has taken up many activities many welfare projects for the benefit of the poor and needy in the society.

Under the stewardship of Mr. K.L. Bansal, the Company has achieved phenomenal success and I wish this journey to continue unending with even greater zeal and pace and soon to touch the new mark of 2K Cr. turnover in the near future.

As a business leader, I wish Mr. Bansal to have a highly rewarding professional career as before and to take the company to establish a place in the world map featuring top Industrial Giants.
Looking back over my shoulder it has been a long yet eventful journey. At first I got to know DEE from my father's eyes visualizing his goals and perspective. Working all through these years I can think towards building a better DEE incorporating better practices and state of the art technology to shape a trusted trademark of all time. The seeds of an idea sown 32 years back has taken firm root and the company is growing into a sturdy tree which is catering to vast specialised needs of various industries.

DEE’s commitment to a more versatile yet sustainable future has always been the key to its success. The future will bring more opportunities, with it much more competition as new markets continue to intensify. To be the brand name and fulfil our potential we need to combine opportunity with perseverence, making sustainability integral to our innovation and performance. All this will not be possible without the trust of our customers and others stake holders.

The piping industry has tough demands with stringent vendor approvals and pre qualification. It requires high quality standards, extensive past experience, sizeable-state of the art facility, skilled workforce and complexity of engineering. DEE with all the necessary approvals in place, accredited by agencies for raw materials, list of customers to vouch for its credibility, largest in house Pre-fabrication facility, over hundreds of certified & qualified engineers and a dedicated engineering division stands tall to take care of all the customers’ requirements. All this credit goes to Mr. K. L. Bansal who laid the foundation of DEE with strong values which have nurtured over the years with utmost care and professionalism. His zeal and commitment to deliver quality products has developed our reputation from a modest design consultancy to the most preferred player across Pre-fabricated sector bringing glory to the Indian Manufacturing Industry. Our pledge to quality is inculcated in our DNA and we breathe by it.
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**Dee Horizon**

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**Core Offerings:**
- Pre-Fabricated Piping
- Induction Bends
- Modular Piping
- Critical Piping
- Process Piping
- Pipe Fittings

**Focus Sectors:**
- Power
- Oil & Gas
- Desalination
- Nuclear
- Fertilizer
- Chemical

**www.deepiping.com**

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Recent years have been the years of piping industry in the country. The effect of Industrial growth is visible all around the globe with all major benchmarks speaking of progress and uncharted success. DEE is a major benchmark, a brand name in the Pre-fabricated piping industry. DEE provides state of the art technology and unmatched quality to each and every one of their client which has led to exponential growth in recent years.

DEE Horizon brings to you an inexplicable tale of utter simplicity, determination and most of all the courage to pursue an idea that will baffle your mind. Everyone has dreams but our perceptions differ and it is the thought process that creates magic. No doubt it has been a roller coaster ride but the poise with which the entire team followed with a single goal in mind made it all possible. The immense support of the family that has seen through thick and thin to help DEE surmount all odds.

With new faces coming up it’s still a long journey, but with the support they get, it’s a different scenario altogether. In fact the new generation is truly blessed to have such ingenious personalities as a mentor who have laid the stepping stones of the currently thriving industry.

The pictorial representation in this feature will amaze you to the core. It is an honour to present this gift to Mr. K.L. Bansal who is nothing short of an inspiration to us and to the entire community.
A roller coaster ride will be the precise definition of the journey pursued by Mr. K.L. Bansal to make his dream a reality. His suave personality, hard work and determination have been the reason behind DEE Piping Systems scaling the ladder of success to reach new heights. With a simple yet powerful motto “Make every customer a repeat customer”, DEE Piping Systems under the vision of Mr. K.L. Bansal evolved from a one room venture to a multi-faceted organisation. Today the company provides extensive Pre-fabricated piping systems solutions across the world. The “Never say no attitude” to a new idea has been the unique quality of this organization and this always remained his life mantra, his driving passion, be it his work or his family.

A Trip down the Memory Lane:
A serious yet endearing personality Mr. K.L. Bansal was born in a small village of Punjab. Recognised by friends and family as charming, Mr. Bansal is known express love in his own little ways. He is extremely attached to his 5 sisters- Saroj, Madhu, Sunita, Geeta & Anita and shares an extremely heart-warming bond with them. He being the only son has been a much pampered child. In fact Mr Bansal’s father never approved of him studying outside, it was his sisters who stood behind him and convinced their father to give his consent. He had an aptitude for education as scoring high grades was never a serious concern. During his college days novels were one of his best friends with “Atlas Shrugged” being his all-time favourite. Throughout his childhood he loved playing Mechano which later on prompted him to get into a Mechanical engineering in college.

A Career to Remember:
Mr Bansal started with a modest job with a tap manufacturing unit. He was known to put in his utmost efforts in every kind of work. This can be tagged as his stepping stone to success. In 1978, he got associated with EIL, a well-
established brand in industrial realm. Between 1981 and 1983, he worked for BST and Punky, but a cushioned corporate job with brand names could not stop Mr. Bansal to start his own venture which turned his vision to reality. His eyes chased the larger goal he set for himself after. One fine day on 7th August 1983, a thought in Mr. Bansal’s mind changed everything and DEE was born on 20th August, 1983.

The Right Approach towards the Big Hurdles:

DEE was born out of a single room where the operations took place for a year along with two likeminded people Mr. Siddhu and Mr. Roy. The biggest support was his father who always believed that his son would definitely weave his dreams into reality one day. Mr. Bansal is one such person who always takes care of his team and tries his best to fulfil everyone’s needs. His family calls him “workaholic”, as they believe his working pace is hard to match with as he always works towards achieving excellence. Every ounce of his energy and effort went into the venture, his long lived dream. 27 C deserves a special mentioning as each and every employee at DEE Piping is aware of its significance. This was the first rented place to work as workshop in Faridabad only to be owned by him later. After
that it was never looking back, a journey was embarked upon an adventurous path of entrepreneurship.

Where DEE Stands Today?

DEE Piping Systems under the leadership of Mr. K L Bansal has evolved into one of the biggest commercial players in the Indian Sub-continent that provides Pre-fabricated piping solutions all across the world. The brand ensures prompt delivery and unmatched quality to customers to build a long standing relationship. The company provides engineering, design, manufacturing and supply of pipe spools as per different standards with labs qualified as per ISO 17025:2005 and other third party inspection approval as applicable for carbon steel, alloy steels, stainless steel and duplex in process piping, power piping and RO piping for Desalination plants. DEE possesses world class Induction Bending Technology and in house Fittings manufacturing facility. The company apart from all this provides an extensive product portfolio having Critical Piping, HRSG Piping, Power Cycle Piping, Process plant Piping, Boiler Integral Piping, Gas compressor Piping, Gas and Steam Turbine Piping, Cooling Water and Lube Oil Piping, Modular Piping and Hangers & Support.

A Dip in the Renewable Sector:

Mr. Bansal always had a vision to bring about a change. This mind-set made him tread towards the renewable energy sector by instituting the Malwa Power Division and the Abohor Power Plant providing indirect benefit to over 10,000 people in rural area. Malwa & Abohor sell electricity to Punjab Electricity Board through a long term power purchase agreement. Making energy from agricultural waste like paddy straw, wheat straw, cotton stalks and other non-useful farming yields, this Biomass plants not only help in reducing air pollution but also provide sustainability to a number of households. Due to amendment in tariff policy for the fiscal year 2012-13, the government has helped the over hauling renewable energy power plant projects which were under performing earlier due to fixed tariffs.

The Personality:

A solemn but loving personality Mr. K.L. Bansal has been very attached to his father, who has been a pillar in his success. Other strong pillar of his success is his wife who stood by him through every thick and thin. He is a bit shy personality who has been never good at expressing his love. A sneak peek into his life tells us he is an early riser and goes for a walk every morning. Punctuality and discipline are his inborne qualities and you can find him in office at 9 am sharp.
Family and work are synonymous as he enjoys both with utmost zeal. Driving is one of his passions which he learnt in Bhatinda and a long trip will put him in high spirits like work does. His favourite destinations include Japan and Switzerland. Exploring places and going on trips was one of his hobbies from the very beginning. One of his favourite pass times include watching the news and a good cricket match would swell his moods. A political icon who inspires him is Narendra Modi, his beaming personality and passion for this country is the thing that he looks up to. An interesting fact that a very few people know till now is his habit of whistling while listening to his favorite songs. One of the movies that inspires him is Chak De India which he showed to the entire management of DEE. He has led his life with conviction that has made DEE what it is today.

A Proud Son and an Affectionate Daughter:

Mr. Atul K Bansal speaks highly of his father and for him he is a role model. He feels blessed to have such an experienced and committed boss at the company. Both of them believe in running a decentralized model where people run the show and management role remains limited to monitoring & mentoring, which played a significant part and booster for the company’s current scenario. Mr. Atul says that though there is no generation gap between him and his father, but yes, sometimes there may be instances when there is difference of opinion on a particular issue. But this also turns to a win-win situation after a logical discussion. As a child, Mr. Atul during his early years had all sorts of comforts, never got scolded for studies as from the start he was taught to be independent. A non-materialistic person, Mr. K.L. Bansal never imposed anything on his children. The same head strong determination like Mr. K.L. Bansal is reflected in the mannerisms of Mr. Atul, who has proved to be the next driving force behind DEE.

Mr. Bansal is blessed with an affectionate daughter Shruti & Son-in-Law Mr. Ankur. Mrs. Shruti says words are too less to describe her dad as he is the inspiration behind her success in life. Her father is the Dhirubai Ambani
of DEE who inspires people to be a leader. He is a person who is clear of his goals and also knows how to achieve them. Humbly, she states if she can follow his footsteps and be a quarter of what he is then surely she will conquer the world. Apart from being a successful entrepreneur Mr. Bansal is a really cool father with whom she shares everything. It's his advices which she simply can't afford to miss. Shruti sums up her dad, Mr. K.L. Bansal as “Adorable brother of 5 loving sisters, and more than endearing grandfather of Ashvika and Vivaan, that's my dad.”

Family truly Matters:
Family has been the biggest strength for Mr. Bansal and a reason for where he is today. He is blessed with a supportive wife who can read his smiles and read through his eyes. It has been rightly quoted that behind every successful man there is a woman and in Mr. Bansal's case, she is his wife, Mrs. Aashima Bansal, daughter of Late Shri Krishan Gupta and Late Smt. Pushpa Gupta. From taking care of the kids to helping in company affairs she still acts as a bridge between Mr. Atul and Mr. K.L. Bansal. She remembers that before the formation of the company, they lead a very simple life. They used to spend enough time together and also travelled regularly across the country. This continued after DEE came into being but the focus gradually shifted to DEE. During this phase she played a significant role while taking care of his personal and professional needs. Some of the happiest moments of Mr. Bansal's life were the birth of his grandchildren Ashvika & Vivaan. As a proud daughter in law Mrs. Shikha Bansal knows Mr. K.L. Bansal to be the biggest inspiration her children can get. Ashvika is the apple of his eye and his favourite moment is playing Gola Masti with her. Apart from them, his 5 sisters and parents have always been past supportive of his dream.

DEE under Mr. K.L. Bansal:
Mr. Krishan Lalit Bansal is the founder and current Chairman & Managing Director of Dee Development Engineers Limited, a brand name in the international market that provides a single source solution for Pre-fabricated Piping Systems. Additionally, it is operating two Biomass Power Plants in the state of Punjab which have proved to be a boon for the rural people. He is the reason for the company's tremendous growth since 1983 when the company came into being. The values inculcated
at DEE are his ideology which prove to be the stepping stones of success. He holds a degree in Mechanical Engineering from Punjab Engineering College.

The company started as a design consultancy of Piping Systems with its first order valued at a modest price of INR 1600. The company after this worked its way forward and started taking EPC contracts for sugar plants. Mr. Bansal has always had a keen eye on the changing business scenario and was able to fore-see the potential in the power sector, so he forayed into Pre-fabrication piping systems business by setting up pipe fabrication and fittings manufacturing unit. His timely decision proved right and after this there was no turning back. A major step was taken which helped DEE evolve into the sought after Pre-fabrication player for energy equipment advocates both overseas and domestic. Over a period of time DEE's name and fame has crossed boundaries and it has become a leading international enterprise offering a end to end source solution for piping systems to power and other process sectors. Mr. Bansal's keen focus on quality, timely delivery and customer satisfaction has helped DEE become a brand name having long lasting relations with reputed names across the world. His efforts to instil the certain attributes such as doing things differently, accepting challenges and taking responsibility of the employees.

DEE have reaped tremendous results as innovation and research have become a part of the DNA of DEE. The entrepreneurship spirit in Mr Bansal kept him on his toes scouting for new opportunities. In 2003, when green power and clean technology was looked upon with some scepticism he decided to enter the Biomass Power Generation space with resolution to give something back to the society which he gained alot.

With the years of industry experience and passion to accept challenges, Mr. Bansal along with his dedicated team engineered and commissioned biomass based power in Punjab within a period of nine months from the date of starting the civil works. The entire EPC of the plants was done in house, led by Mr. Bansal, signifying his project management skills. The plants currently provide indirect/seasonal employment/entrepreneurship opportunities to more than 10,000 farmer families in the state of Punjab, with a dynamic procurement model for biomass waste like paddy straw, wheat straw, dried leaves etc. which otherwise would have been buried or burnt as waste.

Mr. Bansal has always been vocal in sharing his inputs at various seminars/hearings/conferences held to discuss the policies/experiences related to Biomass Power sector. Mr. Bansal and his team has also presented papers/insights at various conferences and the last few were at the CII-EXIM Bank Conclave on India Africa Project Partnership, Infrastructure Investment Summit by VC CIRCLE and Rural India Potential for FDI organized by ASSOCHAM.

For almost three decades Mr. K.L. Bansal has led DEE from front navigating through a varied economic conditions and challenges faced by the business. Under his management, DEE has grown by leaps & bounds and continues its endeavour to achieve new heights. Today with half of its revenues coming from the export market and 65% revenues from power sector DEE Piping Systems, under its visionary chairman Mr. K. L. Bansal is committed to add value to the Indian economy while perusing its mission to lighten the world.

In recognition to the contributions made by Mr. K.L. Bansal, DEE has been conferred as the ‘Best Professionally Managed Company’ at the national level 5th CIDC Vishwakarma awards, 2013 given by Construction Industry Development Council (CIDC) a joint venture of Planning Commission of India and Indian Construction Industry followed by a “Business Leader of the Year” award by the Faridabad Industrial Association. He was also conferred with the Business Excellence Award by International Study Circle in the presence of H.E. Shri. B.P. Singh, Hon’ble Ex-Governor of Sikkim. Mr. K.L. Bansal has also been conferred the ‘Rashtriya Rattan Award’ by the All India National Unity Council for his contributions to the industry.
Here are basically two types of successful persons. One is the brainy one, born genius and other one is a Hard Worker. There are many tools for achieving Success namely Team Work, Punctuality, Cooperation and many more but one can ascertain that Hard Work weighs pretty more than the others.

Steve Jobs, Mark Zuckerberg, Bill Gates, Ratan Tata, Lakshmi Mittal, Warren Buffet and many more, the millionaires and billionaires of our time. Are they born genius? They might be but did they reach the the peak of their careers just by having a high IQ level. Well, the answer is NO! These people are just like me and you, until they started to work hard. Steve Jobs was thrown out of his own company, did he stop? No. He worked harder and built Apple.

There are a lot of examples around us through which we should learn but our general perception is to ignore them as we hesitate to get out of our comfort zone. Here are some points by which you should know the necessity of Hard Work and how to employ Hard Work in your life.

Necessity of Hard Work: In the world of Football, there are two Legends of our generation, Lionel Messi and Cristiano Ronaldo. Messi is a born genius and without a doubt he is the best footballer anyone has ever seen. Cristiano on the other hand is the most Hard Working player ever seen in the world of football.

If Cristiano didn’t have an aim in his mind to compete with the best or to be the best, he might have been playing in some local club, but No, he worked hard to be where he is today.

Even Steve Jobs who was packed with various ideas, worked hard to be the best. He is the man responsible for the rise of Apple. If he would have ignored the necessity of work harder, Apple might have ended in the garage itself where it was started.

Pros and Cons of Hard Work:

Everything has its pros and cons, even Hard Work. “Success is incomplete without Hard Work and Hard Work is incomplete without Success.” These are just words but carry a great meaning. If you think you really worked hard but failed to achieve anything, then, you probably didn’t work beyond your actual capability. The point is simple, a single person is competing against billions of people and everyone is working hard to achieve success. So, does everyone actually achieve Success? No. Only the
people who work hard beyond their capability, beyond their own expectations achieve success.

Everybody puts in a lot of effort to achieve success. During this phase a time might come when you decide to abandon your quest of hard work. Patience is the key virtue in this case as Hard Work takes time to bear fruits. It is in the nature of a person to stay in their comfort zone and turn to procrastination in the end. Now, this is the biggest hindrance in the process of achieving Success and as a matter of fact is self-inflicted. Each and every being on this planet definitely goes through this phase once in their lifetimes and at that point one should ask themselves this question, ‘Why did I start at the first place?’

**Process of Hard Work:**

Hard Work is nothing short of a step by step process. Hard Work is not a mere fruit on a tree ready to be plucked. Hard Work is the process which starts from sowing the seeds to cultivating the field and finally maintaining the tree once it bears fruits. The steps are as follows:

**Analyzing your Potential:**

Have you ever imagined what would Bill Gates be today if he would have started a soft-drink company instead of Microsoft? Actually, Bill Gates first analyzed his potential. He had an aptitude for software coding from the start and concluded the correct profession for himself based on his skillset. A layman can relate it to the way a farmer ploughs a land. He first identifies the type of crop which could grow and then starts the step by step process of cultivating the land.

**Faith and Believe:**

Without these two parameters, Hard Work is just a chapter in any Moral Science book. After analyzing one's capability, a person should have faith and should believe in the work they are doing. If a person does not possess these two qualities then their house would fall even before the first pillar is kept in place. The best example is of a farmer who keeps nurturing the field, day and night, just because of a faith that the seed will grow.

**Proper Care:** Once a person achieves some percentage of their aim they tend to shake from their convictions. At this point if appropriate care is not taken, the person will fail definitely. People generally stop believing in themselves in the due course of time but that is the right time to show perseverance. The best way to work around this is take a break and rebuild your confidence keeping the goal in mind.

**Final Push:** When a person reaches his potential and believes they have lost the ability to push themselves, then that is the time when a final effort is required. It can be the person himself or anybody else who does this for them. Usain Bolt, the World’s fastest racer would not have been the fastest if he wouldn’t have pushed himself beyond his capabilities.

**After Care:** Once, one achieves Success, they get to taste the best dessert ever made. But now there is a bigger role to play with more responsibility on ones shoulders. Most people tend to develop a new set of problems. Hyper tension, anger and depression are just few of them because the fear of losing grows as we tend to rise. So, there is a need to take care of one after achieving a Success. Yoga is the best medicine which quite a few of the successful people practice.

**Success:** The fruit which is plucked from the tree is the best example of achieving Success by hard work as fruit takes its time to grow and is a result of the effort put in to nurture a tree.

**Working Hard:**

Look around, and see the people indulged in their day to day activities. Some are working in office or playing outside, while someone is doing something else. Everybody is busy in their lives.

But, there is a common thread that binds us all that is hard work required to do their respective jobs, to reach their potential, to fulfill their needs and the needs of people attached to them. In the end everyone is working hard to feel satisfied and smile at the end of the day.

Saurabh Mathur S/o Rahul krishna
Customer Relations
DEE Piping Systems is an ISO 9001:2008, ISO 14001:2004, ISO 3834-2, OHSAS 18001:2007 certified company. Incorporated as Dee Development Engineers Limited, the company was founded by Chairman & Managing Director Mr. K.L. Bansal along with a team of two technocrats in the year 1983. Spread over an area of 27 acres of land, DEE is the largest pipe fabrication commercial player in the Indian sub-continent, offering one stop solution for Pre-fabricated Piping Systems across the world. It is also a brand name worldwide, when it comes to Super Critical Piping. It is having an annual installed capacity of 34000 MT Piping fabrication and 2000 MT Pipe Fitting. DEE also owns and operates two biomass power plants in the state of Punjab, India.

The company provides engineering, design, manufacturing and supply of pipe spools as per ASME, PED , IBR, NPCIL, GOST-R. Testing Labs are qualified as per ISO/IEC-17025:2005 (Mechanical and Chemical) & other third party inspection approval as applicable for carbon steel, alloy steels, stainless steel and duplex in Process Piping, Power piping, Oil & Gas Piping and RO Piping for Desalination Plants. The company possess Best-in-Class Induction Bending Technology and in house Fittings manufacturing facility The product portfolio of the company includes Critical Piping, HRSG Piping, Power cycle Piping, Process Plant Piping, Boiler Integral Piping, Gas Compressor Piping, Gas & Steam Turbine Piping, Cooling water & Lube oil Piping, Modular Piping and Hangers & Support.
The Company, with a vision to continue providing end to end solutions for pressure piping systems across the globe, aims to be known as the most trusted brand of all times. DEE works with a mission to provide the customers an unmatched quality using the latest techniques while building a rapo with its clients. The values inculcated at DEE under the leadership of Mr. Bansal include five key principles - fairness, honesty, respect, faith & freedom for customers, vendors, employees, and other stakeholders alike.

DEE started its Journey as a design consultancy firm, finally turned out to be a leading international engineering and manufacturing enterprise. Mr. K.L. Bansal, a mechanical engineer from Punjab Technical University is the man behind this successful undertaking. His dream and vision which have no bounds are the reasons for DEE’s unparalleled accomplishment.

DEE all through these years had gathered a whopping 300,000 MT fabrication experience that includes 10,000 MT of P91 and WB36 experience. DEE is proud to say it specializes in handling complex materials like alloy steel grade P91 and WB36, carbon steel grade 321 and 347. DEE is the largest private sector player in Indian sub-continent’s Pre-Fabricated Piping Industry and is a part of the top 10 list in the world in terms of capacity.

DEE tailors to multinational Power Generation Original Equipment Manufacturers (OEMs), Engineering, Procurement and Construction (EPC) players in Power Sector, Oil & Gas, Nuclear, Petrochemicals, Food Processing, Paper, Agro Chemicals & Fertilizers, Sugar and other process industry firms with a huge selection of high/low pressure Pre-fabrication piping requirements and pipe fittings.

The USP of DEE is its belief in quality, which can be assessed through the number of standards it complies with. The compliance with standards starts from the basic first step that is material procurement to the delivery of the final product. DEE is also equipped with an advanced NABL(National Accreditation Board for Testing and Calibration Laboratories) accredited testing laboratory and in-house ultrasonic and radiographic testing facilities.

**Technology and Innovation at a glance**

DEE has state of the art infrastructure and technologies in place across its production processes. The company’s constant endeavour is to learn, adapt and grow as per the changing trends for which the focus is on innovation and improvement.

**Induction Bending Technology**

One of the latest trends in piping sector is Induction Bending Technology which is rather new to India. DEE incorporated this technology as a part of its drive to provide the Best in Class service. The reputation grew by leaps and bounds as DEE is known to have state of the art infrastructure. This technology which uses induction technique to bend pipes eliminates the requirement of an elbow to be welded to join two pipes. This method increases the efficiency of the process of making pipe spools.

**Robotic Welding and Semi-Automation Fabrication Line**

DEE posses world class and unmatched quality as it is equipped with latest equipment and production processes to fabricate high valued materials like P91, WB36 and stainless steel. DEE is proficient in materials like P92 and P23 having their applications in Ultra Super Critical/Nuclear power generation technology. It is this critical piping segment which brought laurels from customers across the world.

The company uses Robotic Welding Technology provided by Lincoln, USA and has in place over 100+ automatic and semi-automatic welding stations.
DEE has taken another step forward by automating its production processes for manufacturing Piping System. For this, company has installed a semi-automatic production line. Automation has also been implemented in processes like shot blasting (Automatic Machine), elbow forming (induction/cold formed semi-
automatic machines), cutting, bevelling and punching (Semi-Automatic Machines) etc.

**Quality Testing: Digital Radiography and Ultra Sonic Technologies**

Quality is the trademark of DEE and is given the highest importance here. The company is equipped with the latest quality testing infrastructure for Radiographic testing, Ultra Sonic Testing, Magnetic particle testing, endoscopy. DEE uses best in class Digital Radiography which not only increases the pace but the quality as well. DEE is also prepared with an advanced testing laboratory recognised with National Accreditation Board for testing and Calibration Laboratories for raw material inspection.

**Project Management**

Project Management is one of the key functions for the stability and growth of a business as executing a job involves managing multiple stakeholders and meeting deadlines. A known fact that each and every piping fabrication is unique not only in design but can be customized as per the client’s requirements which requires an expertise. The difficult part is coordination as teams may be located at different locations and the client elsewhere. The key is to meet expectations through project management skills. DEE is equipped with latest information systems like EPC Proman, Microsoft Dynamics NAV which integrate all important business functions to support the projects. The company has its own Fittings shop and Engineering Division which makes sure the requirements are met and add strength to DEE execution capabilities.

**Inventory Management using Barcoding**

One of the demanding tasks in DEEE's business is to manage more than 35,000 unique material items more than 35,000 unique material items which are identified by a nomenclature called ICD's (Item Code Description). After a lot of brainstorming sessions the company is implementing the innovative strategy of using Bar Coding System (In Mid-Implementation Stage) for efficient inventory management and traceability.
My eyes were opened in a hospital
For the first time I saw the world
A heaven was waiting for me
So was my identity to build

Today, the hospital is same
But the world has changed a lot
Heaven is again waiting for me
Just my Identity is lost

Only my parents were standing
With a nurse and a doctor
With some tears and love in their eyes
And in mine, a mere laughter

Today my parents are the same
But are along with thousands of people
Tears and love again in their eyes
But my laughter is struggling for survival

Country was running as usual
Only my family was purging for me
Promising me the best they can give
Hoping, I shall live a successful journey

Country is same as of yesterday
Just some more hearts are filled with emotions
Still making the same promise
But deciding themselves my fate and destination

They think I am suffering today
And can get out of it, leaving the Earth

But I want to fight this pain
To defeat them, not the death

I am neither a bane, nor a burden
Not a goddess, nor a piece of decoration
Only someone, striving for respect not sympathy
Just like you only
I AM ALSO A HUMAN!
I AM ALSO A HUMAN!

Mansi Goel D/O Ajay Kumar Goel
Quality
Imagine... you are on the way to office. You are on a highway, drive is smooth, good weather, AC is on and so is your favorite music. Very comfortable drive and even traffic isn't bothering you much. You are at a much higher speed and leaving behind all the cars and while you do that, you are thrilled, because in this race you are leaving behind those who left their homes earlier than you. You get a feeling of accomplishment and achievement. While doing this, you also tend to ignore the passenger/partner sitting next to you in the car because you have to pay too much attention on your fast driving.

Then suddenly something happens. One of the car's tyre bursts. Obviously when you drive at higher speeds, you run a risk. You somehow manage to control the car and stop it and now you are standing on one side of the highway stranded, frustrated and agonized. If you are lucky and have a partner with you, you might get a helping hand. Or if you are lucky, you might get a help from another fellow driver who probably had been in similar situation in the past and knows the pain. And while you are getting the wheel changed/repaired, you see all those cars you had left behind which gave you sense of achievement, zipping by and disappearing ahead.

You manage to change the wheel, get yourself ready again to join the highway but there is a difference now. There is a new set of cars around you who you are driving along. All those probably started much later than you for their offices. Now you are not racing anymore. For, you have realized that it's not important to drive fast and race. What is important is to reach the destination and while you go through the journey, you should enjoy the drive. Moreover, there is no spare tyre now in the boot to recover you should a similar incident happen again. And now when you see someone else racing and leaving you behind feeling a sense of accomplishment like you used to feel, you just smile thinking he will also learn a lesson some day.

How close this is with our professional lives. You work hard and rigorously put all your best efforts to prove yourself and get promotions and increments (race) leaving behind some of the colleagues who are senior than you (started early from homes) and you feel sense of accomplishment. In this race you even tend to ignore your family and friends (co-passengers) and harm your body (tyre burst) landing you in an ICU for either a heart surgery or a brain. If you have a family (partner) or a friend (fellow driver), the recovery might become a bit easier and it is only after the recovery that you realize that important is to enjoy the journey than to rush through. And now when you see a younger colleague on a fast track moving ahead of you, you smile thinking that one day he will also learn his lesson a hard way.

It's very important to maintain a right balance between your professional and personal lives. Work hard but at the same time do spend time with your family and friends. While driving, do laugh and chat with fellow passenger and enjoy the music and the drive. Don't be in a mad race to reach first to the goal ignoring everything else otherwise you will just wear out before reaching the goal.

Why to learn only after the tyre bursts!

M. Madaan
Administration & HR

DEE Piping Systems / 23
Critical Piping  Induction Bending  Modular Piping

**Our Critical Piping Systems are compliant with ANSI/ASME B31.1 - power piping code, Indian Boiler Regulation (IBR) and other industrial standards. We offer piping in the various grades of CS, AS, SS with diameter up to 6" (1625 mm) and thickness up to 150 mm.**

**DEE provides induction pipe bends in the material grades of Carbon Steel, Alloy Steel, Austenitic Steel, Stainless Steel, Incoloy materials with a specialization in P91 Air-Quench induction bends & stainless steel induction bending. We have capability to bend pipes up to 48" (1,219 mm) diameter & 120 mm thickness.**

**DEE offers advanced Modular Piping Solutions for Pipe Rack and Processing Structures which offers advantages over the conventional solutions. These systems find their applications in Petrochemical, Natural gas, Energy projects etc.**

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**PRODUCTS AND SERVICES**

**PRE FABRICATED PIPING**

DEE provides services from designing, engineering, shop fabrication to supply of Pre Fabricated Piping in various grades of CS, AS, SS for power plants, process plants, petroleum & natural gas piping systems. We have fabrication capability of up to 1625 mm diameter & 150 mm thickness and a manufacturing capacity of 34,000 MT/year.

**PIPE FITTINGS**

We have fitting manufacturing capacity of more than 2,400 MT/year. Our product portfolio includes Elbows, Tees, End caps, Reducers, Couplings, Bends, Swages, O’lets, Plugs, Return bends, Stub Ends, Y Pieces, Transition Pieces, Clamps and Trunnions.

**ENGINEERING SERVICES**

We have a dedicated engineering division providing services including Pre - Bid Engineering, Basic Engineering, Detailed Engineering (Layout Engineering, Material Engineering, Stress Analysis, Pipe Support Engineering), IBR Documentation.

**PRESSURE VESSELS & VALVES**

We have wide range of Pressure vessels and other accessories including Heat Exchanger, Pressure Vessels, Industrial Sidewalk Units, Pipe Manifolds, Safety Valves.

**HANGER & SUPPORT SYSTEMS**

DEE provides Hangers, Supports, Anchors and Restraints to withstand all static and dynamic loading conditions which act upon the piping system and associated equipment. Our support systems are designed with appropriate balance calculations to determine load forces at critical stress points.

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<table>
<thead>
<tr>
<th>Products</th>
<th>Pre-Fabricated Piping</th>
<th>Pipe Fittings</th>
<th>Induction Pipe Bends</th>
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<td>AS, CS, SS</td>
<td>AS, CS, SS</td>
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</table>

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Ever since I came back from Europe, we are in very close contact with Dee (asking them to match our European standards) and had also awarded them prestigious projects both in Europe and Asia. The biggest asset of Dee is their manpower – extremely responsive and thorough professionals – who has always delivered on time, in our requested quality and within pre-agreed budget. We will continue to work with them in our new segments and wish them all the very best for their future endeavours and continued support to us.

It gives us great pleasure to know that DEE Piping Systems is bringing out in house magazine “Dee Horizon” and I consider it a privilege to be given an opportunity to share my thoughts with you.

BGRESL has been entrusted with the mammoth task of construction of 6 units of supercritical boilers by NTPC & DVC at Solapur, Meja & Raghunathpur respectively. In our quest for quick and timely completion, Dee Development has been chosen by us for piping supplies to the tune of around 7000 MT of material. Our choice has been proved right by the deliveries, quality and services provided by all of you. We are sure you will achieve much greater heights in the days to come & emerge as a single source solution for all piping needs of customers in the country and abroad.

Wishing the Dee Horizon & DEE Piping Systems all success in the all your endeavours.

Our association with DEE Piping Systems started in 2011 with our first Purchase Order for GNS Project. Since then, MHPS and DEE have done several prestigious and landmark projects together. The relationship between our companies started as a Buyer-Seller relationship, but over the years, our relationship with DEE has grown and matured.

Mr Bansal’s adherence to his commitments to MHPS – Good quality, Reasonable Cost and On Time delivery – have led to the maturity of this relationship.

In addition, DEE has always cooperated with us during our emergency requirements from Site. Going forward, we believe that continual improvement is an ongoing task and we hope that the Quality team and Production team work together to deliver a great quality product on time.

Nishikida san
Mitsubishi Hitachi Power Systems

G. Amudhan
BGR Energy Systems

Jaydeep Naha
Siemens

Client Speaks
Professor: What is an Evil?

Student: “Sir I will explain, but kindly answer my questions first.”

Professor: Ok

Student: “Does cold exist?”

Professor: Yes

Student: “No Sir, there is nothing like cold. It is complete absence of heat.”

Student: Does darkness exist?”

Professor: Yes

Student: “No Sir, there is nothing like darkness. It is actually the complete absence of light. According to physics we can study light and heat but not darkness and cold.”

Similarly Sir, evil does not exist; actually it is the absence of love, goodness, and faith. The student was C.V. Raman.

Similarly, in life, jealousy, anger and revenge cause unhappiness. Thus by adding diligence, intelligence and persistence, we create happiness.

In order to be happy, we need to study the lives of people who have lived great lives, by constantly developing their ability to be diligent, intelligent, and persistent.

A great person to learn from is Madam Curie, the inventor of Radium. Radium is the material which has great applications, especially for the treatment of cancer. Madam Curie along with her husband, worked tirelessly for years to invent the processes to create radium.

One of the first decisions the couple made was that they would not patent their process of extraction, but rather they would give it freely to help science cure disease and assist everyone in the world who needed its help. This decision alone was enough to entitle them to live forever in the hearts of their fellow men. This great quality gave a depth and strength to their lives which is not achieved by many people. The Curies were far more than merely great scientists; the devotion of their lives to an ideal matches the religious fervor of some of the greatest spiritualists.

Happy people, like the Curies, develop the elements of happiness like, diligence, intelligence, and persistence in creating value for others. Happy people, like radium, radiate energy, light, and the power of healing.

Bill Gates, who spent a good part of his life, patenting everything he could, and accumulated a lot of wealth, has been inspired by the likes of Madam Curie and her husband, and is now giving away a good part of his wealth, towards uplifting the needy, and by doing it, they are bringing happiness into the lives of many others and themselves.

By being more and more diligent, intelligent, and persistent we will empower ourselves to help others, which will reduce jealousy, anger and revenge that cause unhappiness in our lives, and thus enabling us to lead happy lives.

HD Sharma
CEO’s Office
One of the most memorable moments of a person’s life after getting a relevant degree and joining a reputed organisation is when your employer recognises your capabilities and rewards you suitably by giving appropriate responsibilities. Though it is understood by many scholars that a year is quite less for a boss to recognise an employee’s strengths, on the contrary the opposite can be witnessed for people from ancient times. You must be well versed with the story of the Gupta Empire king, Chandragupta Maurya whose teacher Chanakya selected the poor boy to make him the Emperor of Bharat which was just by observing his leadership ability in a game. As for today’s young leaders we have the classic example of Cyrus Mistry, whom Mr Ratan Tata appointed as the chairman of world renowned Tata Group, just at the age of 44.

There is a Debate every time we talk about Leaders, whether they are born or created. Whatever the result comes, one thing is unquestionable, that they all have a vision and they carry everything together from their work to the organization with them which leads to overall growth.

It has been seen that old and experienced people sometimes overpower the young and less experienced who are nothing but fresh minds. On the other hand it has also been seen that young leaders grow vertically in an organisation, if they work hard and prove there capability. Let us pick the best qualities of these two breeds of leaders.

Be an Active Listener and a Learner: This is a trait which is difficult to acquire & remains missing in our young leaders while dealing with older & experienced colleagues. Authority must be earned and thus it is important that you observe how your elder colleagues operate. Identify their strengths, personality traits and areas that could use refinement. You must listen to the types of questions being asked in meetings. Do they have a habit of taking notes, is their follow-up good? Always be thoughtful of what you can learn from each member of the team. Additionally, make sure that you identify their areas for improvement and provide your inputs to make an immediate impact on their mind-set which in turn would improve their performance.

Get to know them on a Personal Level: It may be difficult at certain workplaces, as a young leader you must invest your time to get to know the members of your team on a personal level. For example, I remember when I joined my first job at the age of 3, I took this exercise as a part of my management responsibilities. I genuinely made an effort for a year to meet every colleague of mine and felt astonished by the outcome. I advice my juniors to do the same, to invest a few minutes of their working hours to get to know the people. I thank my mentors for their useful advice provided to me at the initial stages of my career.

Blend Old and New Ways (Embrace Differences): There is always a fight whether to continue old or implement new ones. A successful leader would blend both practices and come up with a new integrated model, an ideal win-win solution. Be a genuine leader and do not crave for a title. Respect their thinking and be creative while helping the elder generations understand why your approach makes sense. Take your time, give examples and learn how to earn admiration among your seniors. Traditions matter to the elder generations. I remember how eager I was to introduce new ideas and reinvent the elder ways of thinking. I failed many times at first because I didn’t pay enough attention to the historical dynamics that existed within the organization and between its people. I wasn’t mindful enough of the traditions that were embedded in the company’s culture and how people applied them to their work.

Earn Respect & be Less Authoritative: Respect takes time to earn and should not be forced. Don’t demand or command. Become part of the team. Take responsibility for your actions and learn to hold yourself accountable. It is important that your elder colleagues see that you are doing justification to your role. They want to know that your intentions are pure, honest and true. Learn to care more about your team and less about power. and felt astonished by the outcome. I advice my juniors to do the same,

As Jon Gray, Vice President, North America of HomeAway, Inc. said when he shared his thoughts about managing or working along with people who are older than you: “Managers should legitimately care about each person he or she manages. If you invest your time, effort, and energy in helping people, you will be able to develop personally and professionally. You’ll also be tuned in to their goals and aspirations. As a result, employees are happier and better at their jobs.”

And: “Just because you’re taught to avoid emotional decisions on the job doesn’t mean you can’t have an emotional connection with people in the office. After all, you are a human.

Gaurav Narang
Business Strategy
It’s almost 30 Years. How you evaluate this long journey?

In retrospect sometimes it gets difficult to imagine so many years have passed and a journey, started with some dreams has matured into a full-fledged reality. The DEE we started with, was quite different to the DEE which stands today. Over the years we have grown not only in a better perspective but in a new way to perceive and comprehend things. With changing times we have adapted to latest trends and market needs. Our list of clientele is ever increasing which signifies we are on the right path. Our commitment towards quality, deadlines and customer needs have made us a trusted name in local as well as global markets. Looking at all this I can do nothing but smile.

What is your road-map for the next 3-5 years? Also please share about your vision 2017.

Post 2012, DEE has seen tremendous growth in terms of revenues and technology. Our mission for the year 2017 is to take another big leap and be a 1000+ crore venture. To realize this dream we need to expand our avenues, take up new challenges and cater to a variety of customers’ requirements. Currently we serve the Power, Oil & Gas, Chemical, Fertilizer and Sugar Industry. We plan to expand to the Nuclear, Solar, Geo-Thermal, Desalination, Ship Building Industries providing a variety of piping solutions such as Pre-fabricated, induction, modular, critical, process piping and pipe fittings. Our plan is to be an all-time leader in this segment for many more years to come.

What would be your message for DEE Family?

I often say I have two families, one at home and another at works. Both are my support systems. To grow as a company you require a motivated workforce who believes and lives the dream. All this is possible with the help of the pillars of DEE which are its employees. I would like to take this opportunity to recognize the dedication, commitment and hard work that the employees have put in as a contribution to the success of DEE. I would express my gratitude to each and every individual’s loyalty and efforts as obtaining the substantial growth we have achieved over the years would have been extremely difficult without everyone’s considerable involvement.

K.L. Bansal, CMD, DEE Piping Systems
Where you would like to position DEE in the next 20 years?

The total piping market is estimated to be $10 billion in which DEE’s focus market is estimated to be $6 billion. DEE is associated with the top 5 gas turbine manufacturers and 4 of the top 6 boiler manufacturers across the world. The US, India and Japan together contribute 30% of the total market in terms of power generation which are crucial markets for DEE to envisage next growth phase. The upcoming years have a lot of potential for the power sector which boils down to the piping industry, the key area for DEE. With our expanding target sectors DEE plans to enter the Nuclear and Geothermal areas soon. To sum it up, in the next 20 years, we will make DEE the biggest brand name in the piping industry with customers across the globe seeking only our name for all their piping solutions.

Techno-commercial perspective?

During recent years, our focus has been on technology and innovation. To cope up with the ever changing trends and provide utmost quality we have introduced new machines and techniques at DEE such as Induction Bending Machines from the well renowned brands like Schwafer and Cojafex, a Lincoln robotic welding machine and semi-automatic welding machines. DEE believes in improving the internal processes remove for which we have implemented EPC Proman and NAV, two ERP systems for better handling of projects and data. We have more than 100 certified welders in our workforce and have applied a barcoding system for our inventory which is quite rare in this industry. We are open to new technology and ideas. It is our constant endeavour to learn and grow so as to provide the state of the art solutions/products to our clients.

Any expansion plan globally?

Yes, we have our offices in North America and Japan. Some of our representatives are in South America, Europe, Singapore, Egypt, Korea and Malaysia. Middle East & South Africa have a huge potential which is yet explored by us. Korea has recently approved 8000 MW power plan and privatization to generation which is a key target area. With so many opportunities ahead of us we do plan to raise the bar and tap on every one of them. To make DEE the biggest brand name, we plan to expand our horizons and take our operations to Outside India.

Message for DEE employees

I can proudly say that behind the success of DEE its not only my father, an ideal for all but the entire DEE family who have been with us through thick & thin and have helped DEE mature into a proud organization as it stands today. I promise my employees even better growth opportunities with latest technologies in place and a chance to work with a leading brand name of all times. The progress of the company means the progress of its stakeholders and each and every one of our employee is a stakeholder providing immense support to the company in their own unique way. With a mission to take this company to new heights and to add wings to my father’s dreams, I would like to invite each and everyone of you to join hands with me in making this possible.
CFO asks CEO: “What happens if we invest in developing our people and then they leave us?”

CEO: “What happens if we don’t, and they stay?”
Human behaviour refers to the range of manners exhibited by humans that are influenced by culture, attitudes, emotions, values, ethics, authority, rapport, hypnosis, persuasion and Human behaviour is experienced throughout an individual's lifetime. It includes the way they act based on different factors such as genetics, social norms, core faith and attitude. Behaviour is a result of certain unique traits. Each individual has exclusive traits that vary from person to person and can result in different actions or behaviours that are deemed to be either acceptable or unacceptable in various societies or cultures. There is a varied range of human behaviours with some falling under being common, some unusual, some acceptable, and some outside the acceptable limits. Human behaviour is of utmost importance in an organization as it defines how people work together and interact with one another. Organizations spend time and put in a lot of efforts in the human resource department ensuring a good conduct, appropriate and productive behaviour at the workplace.

Human behaviour is of crucial importance in an establishment of hierarchy. Hierarchies are extremely important in every kind of organization from schools to companies to charities. Human behaviour dictates the strongest to be the highest in a hierarchy and claims the greatest respect. For instance, in a company, people with the most work experience and the highest standard of qualifications gain the best hierarchy position. For an organization to scale heights of success and work effectively, it is necessary for people to know the way in which they can interact with one another and communicate effectively. When a good working relationship is built, the objectives of the organization can be pursued with maximum effect.

Some of the factors that largely affect human behaviour are:

- Social Norms: These are the often unspoken set of rules that shape not just the behaviour but also our attitude.
- Creativity: This is basic and assumed to be present in every individual and pushes them past their comfort zone.
- Core Culture: This is another important aspect of human behaviour. It is truly natural for something like culture that plays such a large role in the society to have an effect on human behaviour.
- Attitude: This is simply an expression of favour or disfavour towards a person, place, thing, or events. Attitudes of different people vary differently with situations.

Relationships: Human behaviour is an analysis of mental processes and individual behaviour, brain functions, emotions, cognitions and contains the analysis of personalities and intelligence, as well as the development of relationships among the people in the society.

Ajit Tewatia
Projects
I have been having the privilege of working in DEE family for last ten years. During the tenure, I have been interacting with almost everybody from top to bottom in the company. Employees here have been working for long periods and they have a sense of belongingness. The trust and sincerity of the employees is shown in the way they put their heart and soul in their work. Their trust has grown over years, because everybody feels that his personal and family welfare is and will be looked after very well in the company, by a very caring, sensitive and kind hearted M.D., in the persona of Mr. K.L. Bansal. Whenever approached, he has always guided us through thick and thin. He has always inspired us to be independent, fair and kind, by his own example. It is under his vision, guidance and management that DEE has touched new horizons every year. Though he is a man of a few words, I have found him as a person with great clarity of thought, vision, dedication and hence quick decision. He has a habit of working religiously for his word and standing by his decisions. He has a keen eye and ear for detail. Punctuality, discipline, commitment and dependability in all walks of life, are the attributes for which he is known amongst his family, friends and business associates. He has been a pillar of strength for all the people in his life. I wish all the best to DEE family and to Mr. Bansal for all his efforts to take the company to unprecedented heights. We all are proud to be part of DEE family.

Good business leaders create a vision, articulate the vision, passionately own the vision, and relentlessly drive it to completion. That’s what Bansal’s have been doing for decades. And finest part is during the journey they are creating more leaders for the company and society at large. I have always found Mr. Bansal to be a great simplifier, who can cut through argument, debate and doubt, to offer a solution everybody can understand and accept. We have come a long way but the journey has just begun to take its pace. I hope to see many more successful years ahead.

DEE Piping systems already a global player is scaling to a new heights under the able leadership of our CMD. A leader vividly accepted by one and all, most professional, highly innovative, Quality conscious and always customer driven.
Mr. K.L. Bansal is a down to earth personality who never demands special treatment. He is a bit shy and does not like the paparazzi surrounding him. A philanthropist by nature who always believes in doing good. He is a natural motivator who is polite by nature but when it comes to implementation, he is quite firm. Believes in being with his team and leading from the front.

After being associated with DEE for more than 2 decades, I have only fond memories to share. I feel proud of being associated to such an illustrious management & the organization. I still vividly remember my 1st interaction with Mr. K. L. Bansal & other top brass. I was instantly impressed with the ambiance, bonhomie & positive vibrations in the company. I gradually started to learn intricacies of piping. The hand holding by Mr. Bansal was so good that it prompted me to put extra hours so I could learn the job as fast as possible. Under his guidance I have learnt to face any challenge anytime.

He is the Living Legend for us because he is really working on the philosophy i.e. Simple Living yet High Thinking. He is very genuine, honest, transparent & caring person. He believes the mission is the top priority which is the reason behind the success of DEE. DEE is a hub of knowledge, technology and expatriates which provides an excellent opportunity of self-exposure with the freedom to work as per will. The work environment is stress free with the top tier management supporting an individual to learn and rise.

During the journey with DEE Piping Systems I witnessed a growth in market reputation of the company having a world class infrastructure & environment. It was possible only due to the right direction of Mr. K.L. Bansal. DEE Piping Systems always tried to meet the customer’s needs by giving a quality product. I always found Mr. K. L. Bansal to be a hard worker, risk taking person who is customer focused and quality oriented person. His personal involvement in all activities, deep knowledge, analytical skills, quick decision power, punctuality, positive attitude & trust on his employees makes him a role model for all of us.
t is but natural for man to philosophize whether one has undergone a formal training or not. Even it is available to a lay man who may not be entertaining any dreams of entering an academy. Likewise, critical thinking too is a reflective act allowing philosophy to flourish. Therefore, I have thought over the vitality of ‘Action’ in the discourse of human life, I feel that there cannot be any alternative to ‘Action’ as the most noble and everlastingly pleasure giving formula to live life light and bright. To my mind the root cause of all our sorrows and subsequent suffering stems from our fallacious attitude towards ‘Action’. As blind followers of European ‘Utilitarian’ theory of Bentham we are gab hand at putting action on the calculus of profit. Even before initiating action we question: What shall I get in return? To romanticize the idea of ‘Action’ without hoping for personal benefits seems alien and totally irrational for which there is no space in our so called rationalized democratic mode of governance.

Plac’d on this isthmus of a middle state,  
A being darkly wise, and rudely great:  
With too much knowledge for the skeptic side,  
With too much weakness for the Stoic’s pride,  
He hangs between; in doubt to act, or rest;  
In doubt to deem himself a God, or beast;  
In doubt his mind or body to prefer;  
Born but to die, and reasoning but to err;  
Alike in ignorance, his reason such,  
Whether he thinks too little or too much:  
Chaos of thought and passion, all confused;  
Still by himself abused or disabused;  
Created half to rise, and half to fall;  
Great lord of all things, yet a prey to all;  
Sole judge of truth, in endless error hurled:  
The glory, jest, and riddle of the world!

Alexander pope in his Essay on Man defines ‘Man’ in the following lines:

Man is placed at a state of “In-betweenness” therefore, s/he cannot claim any sort of perfection yet s/he always aspires towards perfection that is best articulated by optimistic poet Robert Browning in a line: “If man becomes perfect, what else he aspires for...” On the contrary, we claim the fruits of our “Action” without delivering our best. Such an attitude sows the seeds of ‘great expectations’ which call utter disappointment and disillusionment when they are not fulfilled.

Priyanka Kalra  
CEO’s Office
A little boy once wanted to meet God.
He knew it was a long trip to the place
where God lived. So, he packed his suitcase with a bag of
potato chips and a six pack of root bear and started his journey.
When he had travelled about three
blocks, he met an old woman. She
was sitting in the park staring at some
pigeons. The boy sat down next to her
and opened his root bear. He noticed
that the old lady looked hungry and so he offered her some chips. The old lady accepted it and smiled at him.
Her smile was so pretty that the boy
wanted to see it again. So, he offered
his root bear to her. She smiled at him
again. The boy was delighted. They sat
there all afternoon eating and smiling.
But, they never said a word.
As twilight approached, the boy felt
tired and he got up to leave. Before he
had gone a few more steps, he turned
around, ran back to old woman and gave
her a hug she gave him biggest smile
ever.
When the boy reached home, his
mother was very surprised by the
look of joy on his face. She asked the
reason for his smile the boy replied “I
had lunch with god” and you know mom
“She has got the most beautiful smile I
have ever seen!”
Meanwhile, the old woman, also radiant
with joy, returned to her home and her
son was also surprised to see the peace
on her face and asked his mother, “What
did you do today that made you this
happy?” She replied, “I ate potato chips
in a park with God” and she added,
“You know, he is much younger than I
expected”
Some people believe in destiny while
some decide to build their own. A
debatable fact is every little thing in life
happens for a reason or has a meaning
attached to it. Every person we meet
or a situation we face has a specific
role which somehow helps in shaping
our future. Different people behave in
a different way and after a while only
memories stay. You can chose to cry
over betrayal or to learn form it to stand
up stronger than before
After all a human being is bound to
make mistakes which become a learning
for life in theend. The key is to survive
and get inspired by the people who
spread love & care. It’s a small life, why
not make the most of it.

Gaurav Verma
Projects

MEETING WITH GOD....

Three things that keep us going: Faith, trust and hope.

- Once in a village, all the villagers decided to pray
for rain. The next day all the villagers’ gathered
at a place to pray with umbrella. That’s Faith.
- When a small kid is
thrown in the air, he
smiles with trust that
he will be caught by the
person who has thrown
him. That’s Trust.
- When we sleep at night,
we don’t know whether
we will wake up in the
morning or not. Yet we
plan for the next day.
That’s Hope.
Introduction

Stock exchanges are intricately interwoven in the fabric of a nation’s economic life. Without a stock exchange, the saving of the community – the news of economic progress and productive efficiency – would remain underutilised. As business and industry expanded and the economy assumed more complex nature, the need for “permanent finance” arose. Entrepreneurs needed money for long term whereas investors demand liquidity - the facility to convert their investments into cash at any given time. The answer was ready market for investments and this was how the stock exchange came into being.

Stock exchange encourages people to save and invest their savings in shares and debentures. The recent boom in share markets has created financial awareness among the middle class. Every company boasts in terms of hundreds of crores of rupees of investment in their respective projects these days. The stock exchange is like a treasury from which business community can draw unlimited money.
Evolution of Stock Market

The Indian securities market considered one of the most promising markets, is one of the top eight markets of the world. Bombay Stock Exchange Ltd. is the oldest stock exchange in Asia with a rich heritage was established as “The Native Share & Stock Brokers’ Association” (voluntary non-profit organization) in 1875, has evolved over the years and is now one of the premiere exchange in the country. The National Stock Exchange (NSE) is world’s second leading stock exchange was incorporated in November 1992. It provides a modern, fully automated, electronic, screen-based trading system with national reach. Over the period, The Indian Stock Exchange has brought about unparalleled transparency, speed & efficiency, safety and market integrity. It has set up facilities that serve as a model for the securities industry in terms of systems, practices and procedures.

Statement of the Problem

The last ten months have been magnificent for the Indian stock exchange and the outlook in the coming future will remain good for the market. The recent boom has been possible due to good political and economic conditions being able to attracts the inflow of Foreign Intuitional Investors but still retail investors are not participating in a bigger way. This problem has been selected to make a study about current scenario of the stock exchange and what are main reasons of sadistic approach by retail investors.

SEBI’s Role

With the announcement of the reforms package in 1991, the volume of business in secondary segment of the capital market has increased enormously. The then existing regulatory framework was found to be fragmented and inadequate and hence, a need for an autonomous, statutory, and integrated organization to ensure the smooth functioning of capital market was felt. To fulfill this need, the Securities and Exchange Board of India (S.E.B.I), which was already in existence since April 1988, was conferred statutory powers to regulate the capital market. Its role is to protect the interest of investors and to promote the development of stock exchange and to regulate the activities of stock market. It prohibits insider trading and control over brokers. It Checks Price Rigging and prohibits fraudulent and Unfair Trade Practices. It undertakes steps to educate investors so that they are able to evaluate the securities of various companies and select the most profitable securities. There is a sea change in the institutional and regulatory environment in the stock exchange.

Stock Exchange and Retail Investors

A typical retail investor belongs to the middle class. Small investors should form the backbone of any vibrant stock exchange. In India, sadly even post-reforms, conditions have been anything but encouraging for retail investors. According to recent RBI statistics the household sector investment in shares continues to be negligible, at just 0.3 per cent of the GDP and 2.4 per cent of the financial assets. If included Mutual Fund, this account for barely 8 per cent of the total household savings in the country. Further, studies on the total number of investors in India show that this proportion has hovered around only 4 per cent of the country’s total population. The lion’s share of household’s total financial saving roughly 50 per cent placed in bank deposit. The rest of the pie is spread over small savings accounts, at just over 10 per cent and a combined 25 per cent in insurance and pension funds. Because of these institutions’ conservative approach to investing, they appeal very strongly to households. Over the past 5 years, households had mere 5 per cent of their saving invested in the stock market on an average.

Reason for Low Level Participation by Retail Investors

Entry barriers to new investment are much too high. The first time investor is bound to compare equity investment with the simplicity and assured return of a bank fixed deposit or a post office savings scheme. He believes that the modern capital market has raised entry barriers to the point where investor hesitate to enter. There is a significant cost involved even before the first investment. He has to register with a broker, open a DEMAT account, which includes various kind of charges in hope of making money. Reforms itself has had the unintended effect of favoring the large, mostly institutional investors over the small ones.

When it comes to IPOs, an enormous amount of information is dumped on the investor without bothering about whether or not he understands it. Language is also an issue.

Generally it is seen that whenever there is a big correction in the capital market, it is the small investor who is hit the hardest. In India, generally a small investor is a person who either has no or very little knowledge of stock market or who has some knowledge of stock markets by reading newspapers or magazines but can’t take decisions when it comes to investing.

The Indian market is one of the most illiquid market amongst the major stock markets in the world because of its low free float. The lower liquidity in the Indian markets leads to a rapid run up in prices whenever new money comes into the Indian market.

Praveen Kumar
Finance
बेटी को बांद जैसा मत बनाओ कि हर कोई पूरे घूर कर देखे किंतु बेटी को सूरज जैसा बनाओ ताकि घूरे से भहले सब की नजर झुक जाये हम लोग बेटियों के लिये अधिक से अधिक चिता किया करते हैं लेकिन आज के इस समय में एक बेटी का रस्सा बेटों के तुल्य है जो मम्मी, पापा को स्वर्ग ले जाये वह बेटा होता है। किंतु जो स्वर्ग को घर में ले आये, वह बेटी होती है......!

एक पिता ने अपनी बेटी से पूछा कि तुम किसे ज्यादा चाहती हो मुझे या अपने पति cleav को.....?? बेटी ने उत्तर दिया: मुझे सचमुच पता नहीं, लेकिन जब मैं आपको देखती हूँ तो उन्हें भूल जाती हूँ लेकिन जब मैं उन्हें देखती हूँ तब आपको यद करती हूँ आप कभी भी अपनी बेटी को बेटा चह सकते हो लेकिन आप कभी अपने बेटे को बेटी नहीं कह सकते यही कारण है कि बेटियां आम नहीं, खास होती हैं बेटी की मोहब्बत को कभी आ जमा नहीं, वह पूरी है, उसके कभी चलना नहीं पिता का तो गुमन होती है बेटी,
कुछ यू भी...

बैठ जाता हूं मिठी पे अकसर...
क्योंकि मुझे अपनी ओकाल अच्छी लगती हैं...
मैंने समंदर से सीखा है जीने का सतीका,
चुपचाप से बहना और अपनी मीज में रखना।

चाहता हूं दुःख की ये दुनिया
बतल दूःख
पर दो जक्क की रोटी देने के जुगाड़ में फुर्सत नहीं मिलती
दोस्तों

महंगी से महंगी घड़ी पहन कर देख लो,
बक्का फिर भी मेरे हिसाब से
कभी ना चला...

युं हो हम दिल को साफ रखा करते थे...
पता नहीं था की, किसमत
चेरों की होती हैं!!

अगर खुदा नहीं हो तो उसका फिक्र क्यों ??
और अगर खुदा हो तो फिर फिक्र क्यों ???

दो बातें इसान को अपनों से दूर कर
देती हैं,
एक उसका 'भयम' और
dूसरा उसका 'बभयम'...

पैसे से सुख कभी खरीद नहीं जाता
और दुःख का कोई खरीदार नहीं होता।
मुझे जिंदगी का इतना तबुर्जन तो नहीं,
पर सुना है सादगी में लोग जीने नहीं देते।

माफिस की जरूरत यहाँ नहीं पढ़ती...
यहाँ आदमी आदमी से जलता हैं...!!!

दुनिये के बदल से बढ़ा साइज़टेस,
ये ढूंढ रहे हैं की मंगल यह पर जीवन है
या नहीं,
पर आदमी ये नहीं ढूंढ रहा
कि जीवन में मंगल है या नहीं
जिन्दगी में ना जाने कौनसी बात
आखरी होगी,
ना जाने कौनसी रात आखरी होगी।
मिलते, जुलते, बाते करते रहो यार एक
dूसरे से।

ना जाने कौनसी 'पुलकाल'
आखरी होगी...!!!

अगर जीवन में कुछ पाना हो तो
तरीके बदलो...ईशादें नहीं...!!!
गालिब ने खुब कहा है।
ऐ बैंड ठूं किस मजाबन का है ???
ईद भी तेजी और करवाचीय भी तेजा!!!

vfer Hâj) ok
Dokhây Vh ¼ u Mh VH%,

Man is a Tree of The Field
(DHUT 20-19)

DEE Piping Systems / 41
It is an established fact that providing a source of income is the best solution to eradicate poverty of rural India as against various schemes. The agrarian economy cannot be strengthened by ignoring the plight of farming community. Better infrastructure, better power, use of machinery, providing alternative source of income etc. are the key areas to their development. Very few industrial developments have directly contributed to the farmer’s community. Contrary to this, the biomass power industry is one such industry which has directly benefitted the farmer’s community in numerous forms.

This type of industry has the potential to raise the socio-economic status of rural India. In a biomass power plant, agricultural waste is procured and burned in a boiler to produce steam. Steam rotates the turbine to generate electricity. The generation of power from agro waste by a biomass power plant is a renewable source of energy commonly known as carbon-neutral source of energy. It’s a step towards environmental sustainability by saving exploitation and depletion of natural, finite and non-renewable resources like coal gas etc. This technology is modern, energy efficient and environmentally safe. It uses a steam turbo generator with a matching boiler which is capable of firing multiple fuels.

The agricultural wastes such as paddy straw, wheat straw, cotton stalks, mustard husk etc., which were earlier burned by farmers in an open field to make the land ready for next crop, are now sold to biomass power plants for generation of electricity. This provides a...
perennial source of income to the local farmers and is the best way to generate money from waste. The quantum of benefits and number of beneficiaries a biomass power plant generates makes this investment a true CSR (Corporate Social Responsibility) activity as against other types of power plant in particular and other types of industries, in general.

The analysis of operation of a biomass power plant can give the answers as to why an investment in a biomass power plant shall qualify as a CSR (Corporate Social Responsibility) activity. Malwa Power Private Ltd. (DEE Subsidiary), a 7.5 MW biomass power plant commissioned in 2005 in Muktsar district of Punjab was first of its kind in this state. The farmers of the agricultural rich Punjab State had a practice of burning the crop residue in an open field. During harvesting season, the farmers across the State practiced this unhealthy approach of agro waste disposal. The poisonous smoke emerged from burning of such waste material became a serious concern for the Government of Punjab, as year after year, accident toll and pollution related diseases increased. Nevertheless the farmers had no alternative but to burn them to cultivate the lands for their next crop.

Malwa Power was commissioned with an aim to address these concerns. The prime aim of the project was not only to reduce the burning of agro waste material but also to utilize them for the betterment of rural society. The aim was not only to address pollution related hazards by utilizing the surplus agro-residue, but also to provide quality power to the nearby villages, to create employment opportunities in the locality and to contribute towards reduction of Green House Gas (GHG) emissions, which otherwise would have resulted in generation of an equivalent amount of electricity from the fossil fuels.

Around a billion rupees of agro-waste have been procured from farmers since the inception of this plant, providing an additional source of income to around 10,000 farmer families of nearly 50 villages. This Bonus Income by selling the waste has played a significant role in raising the standard of living of the rural families as now they are able to provide education to their children, own vehicles, agro machineries etc. The electrification of the rural households and educating of their children has become a reality which was like a dream for most of them.

Local uneducated and unemployed masses of the locality are engaged in the collection, supply and processing of agro-waste required for the plant. Thousands of farmer families are employed by the plant for collection, supply and processing of agro-waste required for the plant. Technically trained local manpower has been employed for operation of the plant.

Around 5 Crore units of electricity is generated by the plant annually. Assuming an average power consumption of 200 units per month for a rural family, some 20000 odd families of nearby 50 villages are benefitted from this venture. The local households were using agro-waste & coal as a cooking fuel and kerosene for lighting purposes. Quality power was a dream for them.

High voltage electricity is available now round the clock. Students are now able to study during late hours to make their future bright. Electricity is used for irrigation purposes as against subsidized diesel. The generated power is sold to Punjab State Power Corporation Limited under a 20 years binding Power Purchase Agreement.

The magnitude of multifarious benefits can easily be ascertained in pan India. The biomass power plants have a potential to improve socio economic fabric of rural society and quality of living within a small radius of 50 KMs. Conventional manufacturing activity provides economic benefits to few employees and vendors, but the economic benefit from a biomass power plant passes on to many people in a decentralized manner, that too generated from a by-product and not a prime product. Biomass Power plant has proven to improve the standard of living of rural India, a feat which various government schemes and direct subsidy given to farmers failed to achieve. So it is safe to infer that an investment in a biomass power plant has the potential to qualify as a CSR activity in true sense, although it does not qualify for CSR expenditure in our present law.

Ranjan Kumar Sarangi
Legal
ABSTRACT

The two techniques in NDT capable of detecting embedded defects in materials are: Radiography & Ultrasonic Tests. Radiography is relatively much expensive, inconvenient, time-consuming & hazardous. Since radiographic image is a 2-dimensional planar image, it would never indicate the 3rd dimension i.e. either the thickness of the defect or its depth at which it is located within the component. Secondly, radiography has a limited sensitivity for detection of planar defects namely; ‘Cracks’ & ‘Lack of Fusion’ which are not permitted by any pressure vessel code or specifications irrespective of their size & configuration. Next, thickness is no issue for ultrasonic: I personally tested once a shaft of 5 m length [End to end] without any confusion, however, I am sure plenty of ultrasonic systems presently in the market could easily penetrate up to 10 m of length in steel.

Unlike in radiography, however, the smallest defect which a given system can detect in ultrasonic has remained an indistinct & debatable issue with hardly any theoretical deduction in this regard. As a rule of thumb, however, it is assumed that the smallest defect which ultrasonic can detect is \( \approx \frac{1}{2} \) the wave length \( \lambda/2 \) of the ultrasound being used for the examinations.

Purpose of this paper had been to look for further information in this regard & it has been feasible to demonstrate that there is no theoretical limit in this regard. Nevertheless, it has been possible, based on a small experimentation that defects as small as \(~1.8\%\) of the wave length \( \lambda \) could be easily detected.

AFFIRMATIONS:

1. This paper is entirely based on review of already published information in scientific & technical journals by other researchers in the field. Efforts have, however, been made here to interpret & communicate the findings in the simplest possible form & fashion.
2. Even though, two mathematical expressions have been used in the paper, however, if desired, the findings & the physical principles behind the findings can easily be realized even by skipping off these equations altogether.

1.0 INTRODUCTION

Irrespective of the extent of cares & cautions exercised during procedure & performance qualifications, defects do exist in welds & fabrications. Non-destructive testing, therefore, is not an option.

Based on criticality of operations, engineering components could be divided under two categories:

1. CRACK-PROPAGATION CONTROLLED COMPONENT
2. CRACK-INITIATION CONTROLLED COMPONENTS

CRACK-PROPAGATION CONTROLLED COMPONENT

These are the components in which a crack first nucleates during service & then, it grows as a function of time & service stress till the crack grows to the critical size, at which point it would fail drastically.

Critical crack size \( [a_c] \) is the threshold size of a crack which once reached in a component, the component must fail. Critical crack size \( [a_c] \) is a function of component’s material, its geometry & the applied stress & is calculated using fracture mechanics principles.

Under the circumstance

Component-Life = Crack-initiation time + Crack-propagation time to reach the critical crack – size.

Example of component under this category:

- Turbine Casings,
- Nozzle Blocks,
- Valves etc.

Under crack-growth based analyses, NDT techniques are utilized in order to monitor the advance of crack-size till the crack reaches its critical size prior to which the component must retire.
CRACK-INITIATION CONTROLLED COMPONENTS

These are the components in which initiation of a crack alone irrespective of its size, constitutes ground for retirement of the component.

Under the circumstance:

Component-Life = Time spent in initiation of a crack alone irrespective of its size.

Example of component under this category:

- HP/IP Rotor
- Turbine Blades [Gas or Steam Turbine]
- High Temp. Bolts etc.

This write up concerns the 2nd category of components [CRACK-INITIATION CONTROLLED COMPONENTS] wherein the ability to detect the smallest size of defects of the NDT system is looked for. Here the smallest is the size of the defect that the NDT system can detect, longer is the component’s residual life left & safer is the operation & the circumstance. Gas turbine blade either of an aircraft or of an industrial turbine is essentially one such component.

In line with the above necessity, a number of advanced NDE techniques which can detect incipient damage evolutions spontaneously even prior to initiation of a crack are underway in a big way world-wide.

In ultrasonic, frequency of transducer is important. Velocity of sound in a material is a property of the material & would change only if the material changes. Changing the frequency, sound velocity remaining constant, changes the wavelength \( \lambda \) of sound. Wavelength of sound has a significant effect on detectability of a discontinuity. A rule of thumb is that a discontinuity must be larger than \( \frac{1}{4} \) the wave length \( \lambda \) to stand a reasonable chance of being detected. However, it does not mean, if we go on decreasing the wave length \( \lambda \), we will be able to detect smaller and smaller defects using ultrasonic.

In fact, there are circumstances, wherein decreasing the wave length \( \lambda \) adversely affects the probability of detection of a defect such as increasing grain size, thickness, decreasing penetrating power, beam spread etc. etc..

This paper, based on simple physics of sound followed by a small experimentation eliminates most [or all] uncertainties in respect of detectability of the smallest defect in a component using ultrasonic. It further establishes that size of a defect that can be detected using normal commercial ultrasonic instruments may be much smaller than the wavelength \( \lambda \) of the ultrasonic wave being used for the examinations.

PHYSICS OF ULTRASOUND

Ultrasonic, like light, belong to the class of oscillatory physics that are propagated by means of waves except that sounds are mechanical while lights are electromagnetic in nature. A characteristic of such waves is “Diffraction” which takes place as the wave length \( \lambda \) of sound approaches the obstacle’s dimension or exceeds it. Incident wave, under the circumstance, may pass by, disregarding the obstacle, thus invalidating the concept of shadow-formation in geometrical optics & acoustics & one cannot talk of “Reflection” as referred to classical physics which is, rather, replaced by scattering under the circumstance.

Let us consider an obstacle as a sphere of dia. \( \phi \) with a smooth surface. Now as \( \phi \) changes, so the ratio \( \phi/\lambda \) (\( \phi = \text{dia. of sphere}, \lambda = \text{wavelength} \)). Now, let us consider the following circumstance:

1. If \( \phi \gg \lambda \), geometrical acoustics are valid & the sound energy reflected by the sphere has a single maxima of intensity which is 180° opposite to the direction of propagation of the incident wave. Consequently, behind the obstacle is a shadow, i.e., the absence of a sound field & \( \lambda \) plays role.

2. If dia. \( \phi \) of sphere decreases and approaches \( \lambda \), amount of reflection diminishes & scattering becomes stronger. Under the circumstance, back-scattered sound assumes extremely complex distribution in various directions [probably with one or more maxima] which may not coincide with the 180° direction to the incident wave. In fact, under certain circumstance of critical dimension of the sphere, there may even be a minima in this direction [180° opposite]. Manifestation of a shadow, therefore, may be absent.

3. Irrespective of the form & dimension \( \phi \ll \lambda \) of the obstacle, energy is always scattered in all directions and hence, also in a direction opposite to that of the incident wave. Certainly, the intensity of the backscattered energy may be extremely small compared with the incident energy.
Signature of interaction of sound wave with a reflecting surface is influenced at least by the following factors:

1. Influence of acoustic impedance \([\text{velocity of sound in the material } \times \text{density of the medium}]\) of the reflecting object as compared with the acoustic impedance of the medium in which the obstacle is immersed.
2. Attenuation of intensity of the incident wave whether reflected or scattered.
3. Masking effect due to the presence of scattering elements present in the medium.
4. Requirement of a highly sensitive detecting device capable of responding to extremely weak energy of the back-scattered sound.

**EXPERIMENT**

A test block was constructed with flat bottomed holes (FBH) having diameters, $\varnothing = 1.5, 1.2, 1.0, 0.8, \text{ & } 0.5$ mm. Axes of the holes were made parallel to direction of propagation of the ultrasonic waves. Distance of each flat bottom of the holes from test surface was $135$ mm except for $0.5$ mm dia. hole, which was $140$ mm from the measuring surface.

Test block’s thickness (height) was kept $150$ mm and was made of normalized Ni-Cr-Mo steel of specified hardness. Attenuation of the block measured was $\sim 16$ dB/m, which is supposed to be moderate attenuation. A Krautkramer make, model:USIP 11 instrument was used with B4S and B2S probes [Nominal frequencies of 4 and 2 MHz respectively] having effective frequencies of $3.8$ and $1.98$ MHz respectively. Sound velocity in the block was $5995$ m/s and corresponding wave lengths, $\lambda$ were $1.57$ and $3.03$ mm, respectively.

![Fig.1: Signal intensity (dB) Vs. [ratio of diameter of the simulated defects to ultrasonic wave length ($\varnothing/\lambda$).](image)

Results of reflected sound energy from FBHs of different diameters [$\varnothing = 1.5, 1.2, 1.0, 0.8, \text{ & } 0.5$ mm] of the test block are shown in form of a X-Y Plot [fig.1]. X-axis represents ‘$\varnothing/\lambda$’ [Ratio of dia. of the holes to the wave length of sound], and Y-axis, the sound-intensity in decibels (dB) with “Reference Amplitude, $A_0 = 70$ mm”.

Points corresponding to both the frequencies; $4 \text{ & } 2$ MHz [Corresponding $\lambda$’s = $1.57 \text{ & } 3.03$ mm] have been plotted in fig.1. Points corresponding to higher frequency have been plotted on the graph by correcting the intensity level by $11$ dB. This was done probably to allow comparison of the results from the two different probes operating at different frequencies.
The smallest defect of dia., Ø=0.5 mm (16% of wave length, λ=3.03 mm) generated an echo of height [70 mm +10 dB], where ‘70 mm’ is the ‘Reference Amplitude’, A₀ [Fig.1]. Response of this magnitude of the reflected wave from 0.5 mm FBH suggests that a much lower practical detection limit than 16% of λ is possible. It means defects of Ø << 0.5 mm could also have been detected, had it been there in the test block.

It is to note that practically it would be increasingly difficult to make holes [particularly, the flat-bottomed holes] of Ø << 0.5 mm, such as 0.4, 0.3, 0.2, 0.1, 0.05 mm FBHs and so on.

Plot of Fig.1 being reasonably smooth with minimal scatter in the measured values, the following equation was generated to closely fit the plot & represent the curve:

\[ db = \frac{-50}{3}[(\frac{\varnothing}{\lambda})^2 - (\frac{\varnothing}{\lambda})] + 42 \log_{10}(\frac{\varnothing}{\lambda}) + \frac{127}{3} \]  \{1\}

Basic purpose of generating Eqn.1 was to interpolate the responses from defects of dia., Ø <<<0.5 mm & not for the sake of interpreting the physical meaning of the law governing the experimental results.

As reported by the author, under conditions of experiment, a ‘2 mm’ high amplitude could easily be read off the CRT screen. Accordingly, a 2 mm high indication will correspond to an intensity level given by:

\[ 20 \log_{10} \frac{2}{70} = -30.8 \text{ dB} \]  \{2\}

The corresponding value of Ø/λ if derived from fig.1 or preferably from equation of the curve (Fig.1), is found to be = 0.018 i.e. (1.8% of the wave length, λ). Ø/λ = 0.018 yields Ø = 0.05 mm.

It is, therefore, concluded that the limiting smallest detectable defect using a probe of 2 MHz equals to 0.05 mm Ø FBH or 1.8% of the wave length, λ compared to our earlier conviction of 1.5 mm or λ/2 !!!

******TRUTH MUST PREVAIL******

SEAMLESS PIPES: HYDRO TEST

**HYDRO TEST CALCULATION (AS PER IBR REG.42 (i))**

\[ P=2ST/D \]

- **P=TEST PRESSURE**
- **D=SPECIFIED OUTSIDE DIAM. OF THE PIPE**
- **T=SPECIFIED WALL THK. OF PIPE**
- **S=STRESS WHICH SHALL BE TAKEN 40% OF THE MIN TENSILE STRENGTH AT ROOM TEMPERATURE (60 KSI)**
  - [60000x0.40 PSI = 24000 PSI]

**EXAMPLE:** DN 250 SEAMLESS PIPE SCH 12.7MM

\[ P= [2 \times 24000 \times 12.7/273] = 2233 \text{ PSI} \]

**HYDRO TEST CALCULATION As per ASME SA 530 Clause 20.1**

\[ P=2ST/D \]

- **S=60% OF MIN YS**
  - For SA335 Gr.P11 Min. YS 205 or 30 KSI =30000 PSI = 30000 x 0.60=18000
  - \[ P=2 \times 18000 \times 12.7/273 = 1674.7 \text{ PSI} \]

Asgar Alam

IBR

DEE Piping Systems / 47
Our World

Our World is precious to us and we must become more aware of it. Many of our everyday actions are changing the planet permanently. The evidence of global warming is clear in the Arctic and Antarctic continents. We must all do everything in our power to save our World.

Spread the word about conservation:
Any way you can - get people to think about the earth. There are almost 6 billion people on this earth, and every one of them needs to take care of it! Always look for environment-safe products and encourage others to do the same. From recycling to buying less packaging to planting trees to saving water to conserving energy, keep the environment in mind.

Recycle, recycle, recycle:
Recycle as much as you can – paper, glass, plastics, cardboard, newspapers, magazines, compostable food. Buy recycled products.

Re-use your plastic bags:
Plastic takes over 100 years to biodegrade! When you go shopping, reuse plastic bags from a prior trip or bring a cloth bag or backpack.

Buy fresh produce from Display Bins & Buy organically-grown foods:
Select fresh produce from display bins instead of the pre-packaged variety. The more packaging, the more price, and (more importantly) the more garbage in the landfills. Most grocery stores now have organic sections where you can purchase all kinds of fruits, vegetables, and cereals that have had no chemical fertilizer, pesticides, or herbicides. Show the stores you care by buying these things! They’ll be better for you and for the earth because no chemicals are going into the soil or water.

Plant a tree:
Either buy a plant or find a tree (like a maple) that produces seeds every spring, collect a few, and plant them. Start them in pots until they’re at least a foot tall and then plant them. It’s a great way to save the earth’s oxygen!
If you don’t need a light on, don’t use one! If it’s a bright sunny day, don’t turn on a light that you don’t need. If you’re going to be in a room for only a minute, try to go without any electric lights at all. Most houses have enough windows that you won’t need to use lights for most of the daytime. If you do have to turn on a light, turn on only as many as you need and for only the time that you need it on.

Don’t endanger animals:
Don’t buy clothes or objects made of ivory, tortoise shell, coral, or reptile skins. They come from endangered animals or plants.

Put on a sweater:
Put on a sweater instead of turning on the heater.

Warming something up?
A microwave oven uses one-third the energy of a conventional oven.

Water the garden at the right time:
If you water a lawn or garden, do it in the morning or evening when water won’t evaporate as easily.

Inflate your tyres:
Keep your car tyres inflated to the proper pressure to improve fuel economy and extend the life of the tyres.

In general, don’t use disposable products at all:
Diapers/Nappies, pens, razors, towels; they’re all disposable, so there are many ways to help the earth this way. Don’t use paper towels—old t-shirts or towels work fine as messy-use rags. What’s the use of using disposable razors if you have to buy a new bag every other week? It will save you money just to get a good one to keep using! In other words, don’t get sucked into the world of simple disposable items because “it’s easy and convenient.”

Keep a cloth handy in the house:
Instead of using paper towels, keep a cloth towel by the sink and use it to dry your hands or wipe up spills.

Use rechargeable batteries:
Although they may cost more to buy, rechargeable batteries will save you 10 or 20 times the original cost (by not buying new batteries over and over again), and not get thrown in the trash. Prolong the life of any batteries by using a cord (and AC adapter, if necessary) for radios and other appliances when possible. Make your house energy efficient. Use energy efficient light bulbs and energy-efficient appliances.

Pankaj Ahuja
Business Strategy
A few days back in Times of India, I read that Infosys Chief has abandoned the bell curve in favor of a more direct measuring system. Microsoft announced ‘no more curves’ last year. Looks like the bell curve which was introduced 20 years back by Richard Herrnstein & Charles Murray is loosing its effectiveness.

In my opinion, this phenomenon of ‘Forced Ranking’ best works in the field of athletics where relative ranking decides who gets Gold, Silver & Bronze. Why does forced ranking work there without creating a sense of discrimination? This is because every participant has to perform exactly same task, under identical conditions and the performance is judged by the same challenging standards (the stopwatch or the measuring tape).

However, this is not possible in the organizations where the roles are specialized and no two individuals have exactly same work and people work in different units, functions, levels and operate under different conditions.

The rigid distribution of the bell-curve forces managers to categorize a high performer as a mediocre to fit the curve.

Such high performer, demotivated by such artificial downgrade, behaves like a mediocre only. Phenomenon of putting resources at lowest rating (lay-off) creates a constant pressure on everyone which demoralizes employees and leads to drop in their performance. Moreover, using the same relative performance yardstick, the average performers in the worst performing unit may get better rewards than solid performers in the best performing unit. Where is the parity then?

Take an example of a 20 member team where 10% of members have to be given lowest rating and 10% the highest to form a curve. Let’s assume that I have four high performers (say A, B, C & D) who deserve the highest rating and one resource (say T) is actually non-performing and organization will be benefited by letting him go. However, to fit the bell curve, I can put only two members at highest rating (10%) and have to put two people at lowest (10%). That means I have to pull C & D into one rating lower than the highest rating and move another resource (say S) who is good performer to the lowest rating.

So, in my opinion:

- Normalization should happen. It has many advantages like encouraging competitiveness, identifying high performers and also links to the budget allocated for increments, but the curve should be flexible than rigid.
- Lowest (lay-off) rating should be given to only those who definitely deserve to move out of the organization and others should not be forcibly moved into lowest rating only to fit the curve
- Highest rating should be given to all those who deserve it irrespective of rigid percentage.

It’s a time HR needs to come out of the traditional set of policies and following them. We cannot always assume that there are fixed percentage of people always performing high and fixed percentage performing the least. Time has changed and so should the policies to adjust to the new market demands, especially when competition in the market is merciless and increments are all time low.

Archana Singh
Employee Relations
INTERNATIONAL PRESENCE

(North America)
Mr. Bhrigu Wadhwa
He is the founder and president of SCW Commerce Corp, a company engaged in distribution of engineered parts and supply chain consulting. He has a diverse experience in the field of global sourcing, lean six sigma and information systems. Before starting SCW he held various positions in GE’s global supply chain organization in USA and Asia.

(Brazil)
Mr. Olavo Xavier
He holds the director at DNOX with a knowledge of sales, business development and strategic planning with more than 10 years of experience. Before DNOX he worked in a number of companies like Tranter Ind e Com de Equip Ltda, Ansaldo Coemsa, Alstom Power and Metso.

(Europe)
Ms. Kavita Tandon
She is an MBA in finance with an industry experience of 5 years. Her base is Switzerland and looks after the European customers.
Mr. Rajiv Monga

He is in Japan for the past 28 years and is well versed with Japanese energy sector. He holds the post of the president as Asahi TM INC formed in 1989 having its headquarters here. He provides consultation to various industrial sectors such as Power, Oil & Gas, Packaging, Steel, Telecom, Broadcasting, Automotive, etc.

Dr. Osama El Said

He is a member of The American Institute of Industrial Engineers (AIIE), The American Society of Mechanical Engineers, The Chicago Chamber of Commerce as well as the German-Arab Chamber of Industry and Commerce. Additionally Dr. Osama is the Energy Committee co-chair for the American Chamber of Commerce in Egypt. He holds B.Sc, MBA and Ph.D degrees from OSU and Chicago University.

His previous involvement includes work as an agent and representative for companies like Doosan, Sigmatic of Slovkia, and Electro of the Ukraine.

Mr. Ku Ho Shin

Mr. Ku Ho Shin holds the position of the CEO for Ju Chan Corp. The company has been manufacturing a broad range of flanges from forged steel material to world customer base. Its associated industries include chemical plants, oil & gas, offshore, shipbuilding and others.

Mr. Mosche

He is a part of Controlnet which started to represent DEE Piping Systems in Israel since November 2013. His past experience includes being the former CEO of Afcon Group during which he gained expertise in dealing with various industries.
here was a time when marketing was simply a dressed up sales pitch & marketing materials were designed to look pretty, the copy was written to sound savvy and most delivery channels were trusted by consumers. That was also a time, when advertisers reached roughly 70 percent of a viewing audience with one television advertisement.

Times have changed.
Consumers have gotten savvier and, advertisers have more opportunities than ever to reach out to spectators. It may sound advanced, however, there are technologies that allow marketers to scientifically understand the mind of the consumer. Through the brain activity-based research, marketers can pinpoint what precisely causes people to buy a product and uncover how the brain responds to various advertising and marketing tactics. It's not science fiction; it's Neuromarketing.

Weird Science
Neuromarketing is the practice of using technology to measure the brain activity of consumer as a way to discover how people respond to products and marketing messages. These discoveries are then used to fine tune the products and messages in order to be most effective, prior to making an expensive media buy.

The thought behind Neuromarketing is that buying decisions aren’t fundamentally rational decisions, rather they are decisions made deep within the brain and based on an amalgam of thoughts and feelings.

“When we walk down an aisle in a grocery store, our purchasing decisions are made in less than four seconds,” said Martin Lindstrom, a marketing experts and author of “Buyology: Truth and Lies About Why We Buy”. Those decisions take place in the subconscious part of the brain.”

History of Neuromarketing
The blend of Neuro and marketing implies merging the two fields of study (neuroscience and marketing). The term Neuromarketing cannot be attributed to a particular individual as it started appearing orginally around 2002 by Ale Smidts. The basis for Neuromarketing derives from the Greek Philosopher Plato. In simple terms, Neuromarketing suggests that understanding and predicting consumer behavior must incorporate the perspective of neuroscience.

The first scholarly piece of Neuromarketing research was performed by Read Montague, Professor of Neuroscience at Baylor College of Medicine in 2003 and published in Neuron in 2004. The study asked a group of people to drink either Pepsi or Coca Cola while their brains were scanned in an FMRI machine. While the conclusions of the study were intriguing, Dr. Montague did not provide a rationale for how our brain handles brand choices. Nevertheless, the study uncovers the different parts of the brain light up if people are aware or unaware of the brand they consume. In particular, the study suggested that a strong brand such as Coca Cola had the power to “own” a piece of our prefrontal cortex (PFC). The PFC manages our attention, controls our short-term memory, and makes the best of our thinking especially planning. So, according to...
the study, when people know they are drinking Coca Cola, they actually say they prefer the Coke brand over Pepsi and their PFC lights up. Be that as it may, when they don’t know which brand they are consuming, they report that they prefer Pepsi instead. In this latter event, the part of the brain, which is most active is not the EF but an older brain structure nestled in the limbic system. This brain area is responsible for our emotional and instinctual behavior. The Coke and Pepsi study may have not been enough to convince many marketing researchers that neuroscience could help break the neural code of our decisions, but it was certainly enough to start a new field. Since then, hundreds of studies have been performed confirming the correlation between consumer behavior and brain activity.

Neuromarketing is an effective new discipline to improve sales and marketing by applying discoveries from neuroscience. According to the website SalesBrain.com, using NeuroMap™ model, you can scientifically capture, convince and close more customers.

The NeuroMap™ model is made out of five regions, each of which provides you with a profitable knowledge of the science of persuasion and demonstrates how you can discover the way to the “buy buttons” in your customer’s brain. While it is a known fact in marketing that a brand’s image and visual identity are important factors for successful advertising, but how much important, was not known. A couple of years back, a report was released by the Radiological Society of North America that illustrated through FMRI scans that when people were presented with images of a known brand their brains processed these images in different areas of the brain than unknown brands. Known brands, in particular, were processed in the areas of the brain that are responsible for positive emotions, whereas unknown brands tended to be processed in the areas of the brain that are responsible for negative emotions.

Since this study, many big brand names have opted for logo redesigns. After leading a research, discount retailer Wal-Mart™ discovered overwhelming negative emotions in relation to its branding that had been set up since 1992. It elicited feelings of “soullessness” and made consumers feel “daunted.” So, in 2006 the brand set out to redesign the logo to appear friendlier and more open to its targeted audiences. The lower case font paired with a less-obtrusive and powerful star subconsciously helped pass on the new tagline of “Save money. Live better.”

What It All Means

Neuromarketing is appealing to researchers and brands alike because it is undeniably interesting, somewhat controversial and a totally new tactic. Evidence also suggests that when executed successfully in conjunction with traditional marketing strategies, Neuromarketing is successful and defenders of Neuromarketing will let you know the return on investment is great.

All in all, it is important for marketers to keep in mind that Neuromarketing is a tool that can be used within an overall marketing strategy—one that reinforces or supports messaging, media and the brand. It won’t be as fruitful as a standalone strategy.

A famous researcher Mr. William commented on this, “What we already know from behavioral economics and Neuromarketing is that people are remarkably bad at predicting their own behavior, so once Neuromarketing tools are more accessible, we’ll see market researchers using Neuromarketing as a primary tool.”

Neuromarketing is setting down deep roots, science-fiction is current reality. Big brands, small brands and non-profits should consider exploring this tool sooner rather than later. It is also believed that it’s already here, it is more prevalent than you think and it is important to be ready to make the shift to more science-based techniques.

Shashank Bhargava

Business Strategy
DEE, as a very responsible corporate, is committed to follow corporate responsibilities towards the nation in general and the society in particular. Some of the recent major CSR initiatives taken by the company are as under:

- **Education of Girl children:** Recognizing the importance of female child education, DEE has in place, Education fee reimbursement scheme and a scholarship scheme for girls belonging to Below Poverty line families of its nearby villages & also daughters of the workers working in the company.
- **DEE also has formulated a scheme**
wherein on the occasion of the marriage of a girl in the BPL family, a shagun of Rs. 5100/- is handed over to the family.

- Anchal Chhaya-Orphnage (Aanchal Chayya Education and Rehabilitation Society), an NGO at Bhagola Village, Palwal has been provided INR 3.5Lakhs for its various needs. This NGO looks after 40 orphan children.

- Prayas, an NGO at Faridabad has been given a donation of INR 2.5 Lakh. Prayas Social Welfare Society is a Non-Profit Organization working for the education and upliftment of poor and economically weaker children.

- DEE has launched an 8 seater transport service between Jatola-Tatarpur crossing & Prithla mod for general public. This is a Free of Charge service for the people who otherwise have to travel on foot to cover up the distance, in absence of a proper and adequate transport facility on this route. The maintenance of vehicle also is to be done by DEE only.

- Inspired by the PM’s LoN Hkj v fhk lw DEE also has taken the responsibility of cleaning the roads from the company gate to Tatarpur crossing and towards Jatola road.

Dust bins have also been placed to keep the surrounding clean in the nearby village area.

- Dee also has got constructed a Toilets for boys and girls at Government Primary School at village Jatola, Dist. Palwal at a cost of more than Rs. 5.00 lac. The maintenance of the toilets also shall be taken care of, by DEE. The Company proposes to construct a few more such toilets for girls in near by villages.
Mr. R. S. Surjewala awarding ‘Business Leader of the year’ award to Mr. K. L. Bansal at an event organised by FIA

DEE being awarded “Export Leader of the Year” by Dr. A.P.J. Abdul Kalam at an event organised by FIA

Mr. A.K. Jha, Director, Technical, NTPC at the Flagging Off ceremony of the first consignment for NTPC - Solapur Project
DEE Plantation initiative: Mr. Quim Olesti Planting a sapling on behalf of GE

Mr. Rajiv Monga, DEE's Japan representative speaking at an event organised by DEE

DEE Piping Systems Stall at Power Gen & ADIPEC

Kick-off Meeting with FLJOR Team for Fort Hills Project, Canada
DEE as a Piping Partner at Dubai Tomorrow Summit held at Dubai, UAE

CEO Awarding the winning team at DEE Premire League

Dee Development Engineers Ltd. at Power-Gen, Mumbai

DEE Cultural Extravaganza

Lohri Function at DEE
Every member of DEE family promises to travel an extra mile with him to fulfill all his dreams and vision.

With love & a gratitude we celebrate 60 years of Mr. K. L. Bansal and wish him many more.

A few lines dedicated to Mr Bansal:

“The woods are lovely dark and deep

But I have promises to keep

And miles to go before I sleep

And miles to go before I sleep”

Thank You

DEE PARIWAR
DEE Development Engineers Limited

From a Humble Beginning of Design Consultancy to the leading international Piping Fabricator group, we have crossed quite a few milestones. We are not only pioneers of Pre- Fabricated Piping, we are also one of the well-known manufacturers of Pipe Fitting and Pipe Bending.

### Key Facility Highlights:

- DEE has state of the art infrastructure and technologies in place across its production processes such as Induction bending Machine, Robotic Welding machine, a world class Fabrication Line and many more
- Equipped with 100+ stations to carry out manual as well as mechanized welding
- NABL accredited testing laboratories
- Separate fabrication bays for P91, stainless steel material
- In house Non-destructive testing facilities like RT/MPT/UT/LPT

### PRODUCT PORTFOLIO:

#### Piping Systems:

- Boiler Integral Piping Systems
- Boiler-Turbine Auxiliary Plant & Equipment Piping System
- Gas Turbine Piping System
- Steam Turbine Piping System
- HRSG Piping
- Cooling water & Lube oil Piping
- Power cycle Piping
- Process Plant Piping
- Gas Compressor Piping
- Riser and Down comer Piping
- Balance of Plant Piping
- Super Heaters & Economizers

#### Pipe Fittings

- **End Connection:** Butt Weld Fittings, Socket Weld Fittings
- **Shape:** Elbows, Tees, End Caps, Reducers, Coupling, Bends, Swages, O'lets, Plugs

#### Piping Design & Engineering:

- **Pre Bid Engineering:** Drawings/Documents, Pipe Routing, BOQ Estimation
- **Basic Engineering:** Pipe Sizing, Piping Design, Pressure Drop Calculations, Detailed Engineering: Stress Analysis, IBR calculations, Layout Engineering, Support Engineering

### Modular Piping

- Piping Systems:
- End Connection:
  - Butt Weld Fittings
  - Socket Weld Fittings
- Shape:
  - Elbows
  - Tees
  - End Caps
  - Reducers
  - Coupling
  - Bends
  - Swages
  - O'lets
  - Plugs

### Critical Piping

- Piping Systems:
- End Connection:
  - Butt Weld Fittings
  - Socket Weld Fittings
- Shape:
  - Elbows
  - Tees
  - End Caps
  - Reducers
  - Coupling
  - Bends
  - Swages
  - O'lets
  - Plugs

### Induction Bending

- Certifications:
  - ASME S & PP ST STAMP
  - ISO 3834-2:2005
  - ISO 9001:2008
  - ISO 14001:2004
  - BS OHSAS 18001:2007
  - PED 97/23/EC, AD2000-WO & EN 764-S
  - PED 97/23 EC, MODULE H
  - NABL ISO/IEC 17025:2005
  - NABL ISO/IEC 17025:2005
  - IBR CERTIFICATE
  - NPCIL APPROVAL

### AWARDS:

- Export Leader of the Year - Faridabad Industrial Association
- Best Professionally Managed Company – CIDC
- Rashtriya Rattan Award - All India National Unity Council
- Business leader of the Year - Faridabad Industries Association
- Best Performance in Piping Systems award – BHEL
- Indian Achievers Award – All India Achievers Foundation