ISSN 2249-5630

Nirma University Journal of Business and Management Studies

Vol. 5, Nos. 3 & 4; July - December 2022

Cases

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Annual Subscription

Rates by Post	**India**	**Overseas**
for Individuals	Rs. 500	US $ 15
for Institutions	Rs. 1000	US $ 25

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Payment may be made by crossed demand draft drawn in favour of "Institute of Management, Nirma University", payable at Ahmedabad.

Claims for missing issues should be made within three months of publication.

Printed and published by Ms. Ritu Agarwal, Publication officer on behalf of Institute of Management, Nirma University and printed at M/s Shivkrupa Offset Printers, 3 J/K Block Ravi Estate, Opp. Gurudwara BRTS Bus Stop, Dudheshwar, Ahmedabad- 380004 and published at Institute of Management, Nirma University, Sarkhej Gandhinagar Highway, Ahmedabad 382481, Gujarat. Editor : Dr. Samik Shome.

** New Series*

Nirma University Journal of Business and Management Studies

Vol. 5, Nos. 3 & 4; July – December 2022

Contents

Cases

Saga of a Sojourn

This publication marks the culmination of a long sojourn of patience, perseverance, and optimism. It began when we met on February 11, 2018 to design a workshop on case method for management teachers. We decided that the workshop should cover aspects of case teaching and writing. Further, we agreed that case writing module should be hands-on and should provide opportunities for field visits, interaction with executives, identification of case writing opportunities and selecting one for developing a case subsequent to the workshop.

We organised the case method workshop during April 16 – 30, 2018 under the faculty development program. Prior to the workshop, a faculty team from Nirma corresponded with the alumni of the MBA programme on Family Business and Entrepreneurship offered by Nirma Institute of Management, obtained their permission to allow the participants to visit their organisations and explore opportunities for writing cases. We scheduled two full day visits to dovetail with the technical inputs on case writing provided in the workshop. The organisations to be visited included Next Engineering, Nirav Engineering, Aarti Group and Venus engineering.

Many participants from Nirma and other Institutes of Management attended the workshop. Their sessions on case writing covered aspects like structure of a case, stages in case writing, tasks in the field for identifying case writing opportunities, development of a case writing proposal, collection of data, preparation of filed notes, drafting a case and finalizing it. The participants also received inputs on developing a teaching note and progressing from teaching note to research intent note. The participants visited various organisations in the neighbourhood of Ahmedabad and interacted with the owners and executives. They worked in teams of three or four participants and identified case writing opportunities. They submitted their case writing proposals to the owners and obtained their permission for follow up visits for data collection. They presented their field notes and early drafts of the cases in the workshop and obtained feedback from colleagues. At the end of the workshop, we wished that the participants would develop their cases and publish them. We were hopeful of receiving at least eight cases for publication.

Then there were several slips between the intent and its realization. The participants' progress in developing the cases was disrupted by teaching schedules, administrative pressures, requirements for developing new courses or writing research papers, and lethargy. The incidence of pandemic disrupted the progress further. Amidist this, we saw hope when we received the drafts of five cases. We reviewed these drafts and offered detailed comments

on their content, structure and language, and offered suggestions for restructuring and strengthening the drafts. The authors took time to revise the drafts and submit the revised versions. We reviewed these versions again and offered suggestions for finalization. The authors responded enthusiastically and finalized their cases for publications. We congratulate the case writers on completing their case writing journey successfully.

We thank the participants of our workshop, the alumni of the MBA programme on Family Business and Entrepreneurship, our administrative staff for making this sojourn enjoyable. We are very happy to present these five cases to you for your use in your sessions. Of these four cases relate to the manufacturing sector and one to the service sector. They span academic themes like diversification, financing growth, succession planning, capital budgeting and distribution management. We hope that the achievement of our case writers would inspire other colleagues to commence theirs.

All through our journey from conceptualizing the workshop to brining this volume, we have realized the opportunities our alumni can create for writing cases. Though regional, their cases would be more relevant in our educational programme. We should harness these opportunities more actively.

Prof. P. K. Chugan
Prof. M. R. Dixit
Prof. M. Mallikarjun
Prof. Meeta Munshi

NEXT ENGINEERING: TO BID OR NOT TO BID

Prof. Balakrishnan Unny*
Prof. Diljeetkaur Makhija**

Mr. Ronak Patel, Mr. Bhavik Patel, Mr. Varun Patel, and Mr. Suprit Patel, the founding directors of Next Engineering, met on December 5, 2017, a day before they submitted their first turn key project proposal in Ahmedabad, to discuss the road ahead for the company. The proposal was for an INR 110 million turnkey project for one of India's leading mining and mineral processing companies, Gujarat Mineral Development Corporation (GMDC), to implement an Effluent Treatment Plant (ETP). Next Engineering in its initial years (2012–2014), focused on the supply and installation of water and air pollution monitoring and control instruments. Though the directors were delighted to bid for this project, they were apprehensive about their ability to meet the challenges that lay ahead. Mr. Ronak stated, *"It is like we are back where we started, we were not taken seriously and had trouble establishing our credibility to win clients."*

NEXT ENGINEERING

Next Engineering, a start-up located in Ahmedabad, Gujarat, located in western India, was registered in

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***Assistant Professor, Institute of Management, Nirma University*

November, 2012 by Mr. Ronak Patel, Mr. Bhavik Patel, Mr. Varun Patel, and Mr. Suprit Patel; four men in their mid-20s, who had started a venture distinct from their family businesses. With degrees in engineering, the founders had decided to focus their attention on water pollution monitoring and control. Mr. Ronak Patel had been influenced by a World Economic Forum study that identified water as a significant global risk[1].

In 2018, Next Engineering had 26 employees and 4 directors. Its 12 service engineers were responsible for the installation and maintenance of all of Next Engineering's projects. The engineers had completed their graduation in engineering, and for most of them, this was their first job. Next Engineering also had 7 technicians who worked on-site with the clients on a full-time basis. All the technicians and engineers reported directly to the service head, who in turn reported to Mr. Bhavik Patel. The company also had 5 sales personnel who supported the directors in sales and business development activities. The sales team consisted of graduates who directly reported to Mr. Varun Patel. The company also had an accountant who managed the day-to-day financial aspects of the company using Tally ERP. The accountant was supported by back-office personnel who also looked into the human resources function. Both, the accountant and the back-office personnel also reported to Mr. Bhavik Patel. The organization did not have a formal organizational structure as all the employees worked closely with all the directors.

The directors themselves had overlapping roles and there was no clear demarcation in their duties. Exhibit I provides details about the informal organization and profile of the directors. In India, industry-specific pollution control regulations were under the purview of the Central Pollution Control Board and the various State Pollution Control Boards. They regularly published and enforced the standards for the discharge of environmental pollutants. Water quality and its corresponding pollution levels were determined by the category of usage of water and the type of pollutant. For details on water quality management, refer to Exhibit II.

Next Engineering had a range of solutions which included Continuous Emission Monitoring Systems (CEMS); Continuous Effluent Quality Monitoring Systems (CEQMS); Continuous Ambient Air Quality Monitoring (CAAQMS); waste water treatment solutions; smart city solutions, and real-time data transfer to the Central Pollution Control Board[2] (CPCB) and

[1] Refer https://www.weforum.org/agenda/2015/01/why-world-water-crises-are-a-top-global-risk/

[2] The Central Pollution Control Board (CPCB), statutory organization, was constituted in September, 1974 under the Water (Prevention and Control of Pollution) Act, 1974. Further, CPCB was entrusted with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981.

State Pollution Control Boards (SPCBs)[3]. A cloud-based solution used for real-time data transfer was built in collaboration with LogicLadder Technologies P. Ltd. In monitoring systems, the solutions were built to collect the pollutant levels in air or water using a custom sensor and transmit the controller. The typical sensors implemented by Next Engineering included SOX, NOX, CO, SPM, COD, BOD, TOC, TSS, PH, DO, FLOW PM10, PM25, abd O3, among others. Refer to the glossary of terms used for further details. A detailed list of solutions has been provided in Exhibit III.

The installation of pollution monitoring and control systems could be classified into three types, namely standalone systems, integrated systems, and turnkey solutions. Standalone systems were often used when a plant wanted to monitor one particular parameter and this did not involve the implementation of an extensive communication system. Standalone systems were the easiest to implement as they often only had to deal with one sensor and could be completed within 3 hours.

The integrated solutions were more complex in nature than standalone systems. Here the installation team might have had to implement multiple sensors in multiple locations, and the data from all the sensors might have had to be fed into one display from which the centralized control could be exercised. These systems were sometimes referred to as Supervisory Control and Data Acquisition Systems (SCADA). The complexity of integrating multiple sensors using varied communication media was the challenge involved in implementing integrated systems.

The next category of implementation was referred to as turnkey projects in which the implementer was given free rein to solve a particular problem. Here the implementer was responsible for all the activities, including the construction of the plants. Turnkey projects often took years to implement, whereas integrated systems took only 3 to 6 months.

GROWTH OF NEXT ENGINEERING

Genesis of Next Engineering

The company focused on the sales of instruments related to water pollution monitoring and control. In early 2013, the company primarily worked as a distributor of laboratory equipment for a local manufacturer based in Vatva, Ahmedabad. Next Engineering supplied

[3] CPCB has issued directions u/s 5 of the E(P) Act to the companies for installation of Online monitoring system for strengthening monitoring and self-regulation. Failure to comply with the directions may lead to closure of the units. Industrial units are required to submit the compliance data online

various laboratory equipment, including bomb calorimeters, pH meters, and furnaces to universities and labs. During this period, the company aimed to keep the ball rolling and looked for business opportunities within the market.

The company's first project with an industrial client was the sale of water pumps to the Oil and Natural Gas Corporation (ONGC) in January, 2013. Their next breakthrough came in April, 2013 when the Essar[4] Plant in Jamnagar gave them a contract for the purchase of a bomb calorimeter. Mr. Varun Patel, who still worked with his previous company, generated both leads.

After conducting research, Next Engineering contacted Delhi-based 'Rajdhani Instruments[5]', which had 20 years of experience in the Indian market for bomb calorimeters. This purchase was funded by the families of the directors, and the total cost of the purchase was INR 0.3 million.

By June, 2013, all the directors worked for Next Engineering on a full-time basis. Additionally, the directors realized that to grow the company they would have to move out of the ad-hoc sales of laboratory equipment. The market for the supply of laboratory equipment had fierce competition and had very little profit margin. The first major challenge that Next Engineering faced was to establish itself as a player in the instrumentation market within Gujarat. The major reason for this challenge was the lack of experience in implementing the sensors in large companies. At this stage, the directors decided to partner with equipment manufacturers and become their exclusive suppliers.

As of November, 2017, Next Engineering had an annual turnover of INR 11 million (refer to Table 1 for details). They had executed over 150 projects across India (Refer to Exhibit IV for a detailed list of projects).

[4] For details refer https://www.essar.com/
[5] For details refer http://rsic.co.in/

Table 1 Year-wise Turnover (Without Tax)

Sr. No	Year	Total Turnover in INR (without tax)
1	2013-2014	1,448,726
2	2014-2015	16,522,144
3	2015-2016	27,014,105
4	2016-2017	35,486,417
5	2017-2018	171,229,111

Source: Company records

Next Engineering as a Supplier

As a result of diligent research, the directors had identified Process Instruments[6] as a potential business partner. The key factor for choosing Process Instruments was the quality of their water analyzer. The DO analyzer was able to provide results within 30 seconds, whereas the competing equipment took 4 to 5 minutes. The other major factor that had influenced Next Engineering was that Process Instruments was a global player and it did not have any presence in the Indian market.

Over the next quarter, the directors of Next Engineering focused their attention on selling products of Process Instruments. During this period, they contacted local original equipment manufacturers (OEMs) based out of Ahmedabad, Baroda, and Surat. However, the directors soon realized that the products of Process Instruments did not work in the Indian context. The first issue was the price. Next Engineering lost orders because they were not competitive in price. However, after negotiations, Process Instruments provided a 10% discount to Next Engineering. The second issue was that the analyzers did not suit the industrial effluent as they were built to assess the quality of drinking water.

In October, 2013, Next Engineering bid for a contract with Zydus Cadila (an Indian multinational pharmaceutical company headquartered in Ahmedabad) to provide online BOD and COD analyzers. Process Instruments did not produce these analyzers. After some research, the directors started their negotiations with Xylem Water Solutions and Water

[6] Process Instruments (UK) Ltd. (Pi) is a global supplier, providing water analyzer instrument solutions since 1998. With offices, a laboratory and new manufacturing facilities in Burnley (UK)

Technology[7]. The directors researched the products offered by Xylem for the Indian market. Even though Next Engineering lost the contract with Zydus Cadila, they were able to gain the trust of the management of Xylem as they demonstrated an in-depth understanding of Xylem Products and were able to recommend the right products to potential clients.

In November, 2013, the Ahmedabad Municipal Corporation (AMC) released a tender for the supply and installation of quality monitoring equipment for 5 sewage treatment plants (STP). The tender required the creation of a SCADA system that would integrate the data from the 5 plants. However, Xylem was not an approved monitoring instrument provider for AMC. The directors volunteered to discuss with AMC officials to try and add Xylem to the approved instrument providers list. Mr. Ronak Patel was able to convince the AMC management by presenting the features of Xylem sensors. Xylem was included in the approved supplier list for the AMC.

The AMC STP contract was awarded to Chetas Control Systems Private Limited (CCSPL), who in turn subcontracted Next Engineering to provide Xylem products for INR 5 million. Next Engineering convinced CCSPL to use the Xylem products based on their superior quality. The instruments were made from titanium instead of stainless steel, which was suited to corrosive environments. The low maintenance of equipment and promise of prompt customer service were also key selling points. Next Engineering tried to deal with any customer complaint within 24 hours. This unique selling point helped the company establish itself within the market. The directors also noted that the major problem with larger competitors was that their service quality was not satisfactory.

In December, 2013, Next Engineering supplied 10 pH analyzers to Adani Wilmar[8], who was extremely satisfied with the performance of the instruments. Mr. Ronak Patel stated, *"Normally pH analysis lasts only 6 months in such a corrosive environment, our equipment lasted longer than that. This created a great impression with our client and they were now willing to provide leads to their sister companies as well."* By July, 2014, Next Engineering had Adani Power also as a client through a recommendation from Adani Wilmar. Adani Power required BOD and COD analyzers for their plants in Mudra, Gujarat, and Chhattisgarh.

[7] Xylem in company headquartered in USA that offers a portfolio of products and systems for treating water and wastewater

[8] For details refer http://www.adaniwilmar.com/

Earlier in January, 2014, Next Engineering had been involved in the bidding process for supplying SOX and NOX analyzers for GMDC. During the bidding process, it had been clear that Next Engineering did not have the requisite experience to win the tender. During the same time, Next Engineering had entered into a contract with Parker Kittiwake[9] for the supply of required instruments. Next Engineering had been able to be part of the tendering process based on their experience with Parker Kittiwake. This had been an INR 5.2 million project and Parker Kittiwake had required payment in advance for the instruments. Next Engineering had borrowed money from a local non-banking financial company to meet their requirement as it had been convenient due to less documentation.

Transition into Integrated Solutions

In late 2014, the directors felt that their venture was becoming stable. The AMC and GMDC projects had established Next Engineering as a serious player in the market. By December, 2014, the company had moved to their present location. Additionally, they started hiring personnel to assist in the installation of the instruments. In early 2015, 10 service engineers were hired along with the service head. Earlier, Next Engineering had managed its accounting by outsourcing the function to a local Chartered Accountant. However, with the growth of the company, a permanent accountant was also added.

The transition into integrated solutions started with the bidding process for the JK Papers SCADA system in January, 2015. JK papers required an integrated SCADA solution for their two plants i.e., one in Surat and one in Jaykaypur, Odisha (an Indian state located in eastern India). The project required multiple sensors to be connected across the plant using fiber optic connections, with the output displayed in the control center. This project was a unique challenge for Next Engineering as they did not have experience in the area of fiber optic communication. Next Engineering won the tender by outperforming three competitors. The competing bid was for INR 0.8 million, whereas Next Engineering's bid was for INR 0.37 million. This tender boosted the morale of the organization, although the project was not profitable at the bid cost. They took the assistance of external experts to complete this complex project. During the execution phase, Next Engineering was able to negotiate the price with different stakeholders to make the project profitable. Mr. Ronak Patel observed, "*The learning that we had while executing JK Papers' project was immense and by resolving the issues that we faced, the service team had gained valuable experience in setting up such complex systems.*"

[9] Parker Kittiwake was created after Kittiwake Developments Ltd was acquired by Parker Hannifin in July, 2012. They are global providers in motion and control technologies, including emissions monitoring and vibration, and acoustic emissions.

In October, 2016, Next Engineering embarked on its most ambitious project to date. They had bid and won the contract to implement an integrated pollution monitoring system at NTPC[10] across its 24 plants. This project was jointly awarded to Next Engineering and Logicladder, wherein Next Engineering provided the hardware installation, and Logicladder supplied the software of the project. This was also a complex project as it involved installing and integrating over 700 analyzers across 24 plants. Additionally, there were 50 different types of analyzers which were connected across the country, and real-time information from these analyzers was sent to CPCB and SPCB. Installing SSCADA-based systems made Next Engineering a forerunner in the market. This project was followed by another similar project for Gujarat State Electricity Board where six different plants were integrated.

Even though the company was looking to transition into integrated solutions, they kept servicing new clients for their standalone solutions as well. In the initial years of Next Engineering, employee attrition was high. They had to focus on an employee retention policy and a backup plan for contingencies. Employees were given salary raises at the same rate as that of the company's growth. For example, if the company grew by 20%, employees were given a 20% raise. The effect of the company's recruitment and retention policies showed great dividends. The attrition reduced and the staff gave more than what was expected out of them. The staff related themselves with the company's growth and provided excellent service to their clients. For example, the service staff were on NTPC's site for three months continuously, without a break.

In January, 2017, Next Engineering partnered with LAR Process Analyzers AG[11] for the TOC analyzer, and Robert Bosch Engineering and Business Solutions Private Limited for ambient air monitoring systems. As an expansion strategy, the company looked to set up local offices in Jaipur and Mumbai. This was in response to their clients' request for local offices to deal with service requests. The Mumbai office was specifically planned to deal with the implementation of energy monitoring solutions of Bosch. Bosch was in the business of energy utilization monitoring without embedding sensors in individual devices or appliances.

BIDDING FOR TURNKEY PROJECTS

In the time period between 2012 and 2017, Next Engineering expanded its footprint in the market, from the perspective of number of clients, and diverse range of products offered. The expansion into integrated projects was a success, with each project adding to the technical know-how of the team.

[10] NTPC Ltd., is an Indian Public Sector energy conglomerate.
[11] LAR Process Analysers AG is a manufacturer of high quality online water analyzers based in Germany.

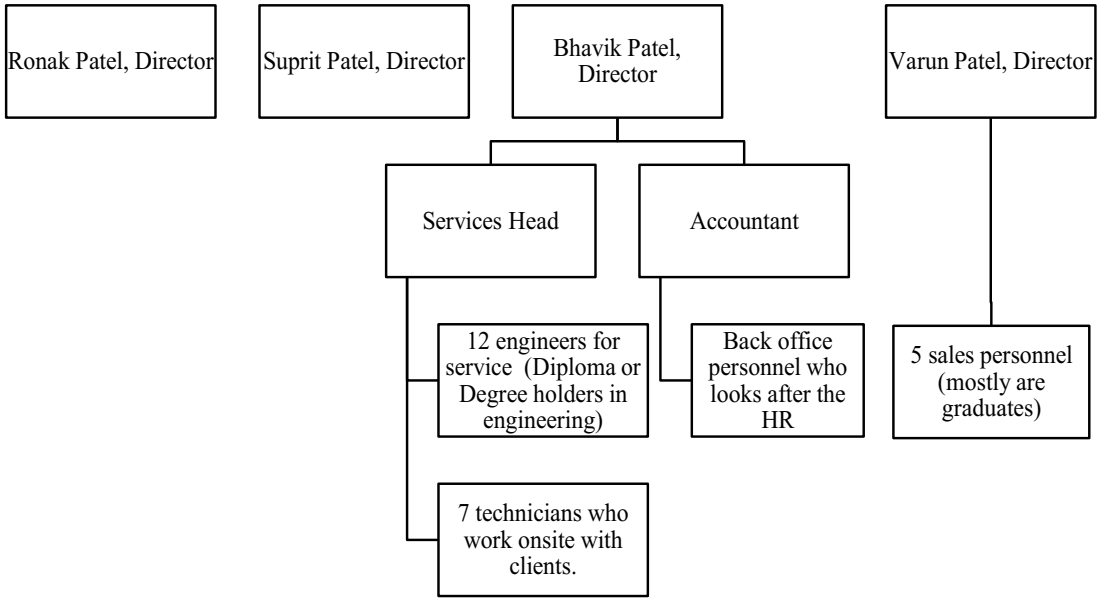
On the eve of bidding for their first-ever turnkey project, the directors needed to deliberate on whether it was the right time to expand their solution list. They had to deliberate on the challenges they might face when bidding for their first-ever turnkey project.

GLOSSARY

BOD	Biochemical Oxygen Demand
CAAQMS	Continuous Ambient Air Quality Monitoring
CEMS	Continuous Emission Monitoring Systems
CEQMS	Continuous Effluent Quality Monitoring Systems
CO	Carbon Monoxide
COD	Chemical Oxygen Demand
CPCB	Central Pollution Control Board
DO	Dissolved Oxygen
ERP	Enterprise Resource Planning
ETP	Effluent Treatment Plant
FLOW	The amount that flows through the various wastewater systems
HDMI	High-Definition Multimedia Interface
INR	Indian Rupee
IOT	Internet of Things
NOX	Nitrogen Oxides
NTPC	National Thermal Power Corporation Limited
OEM	Original Equipment Manufacturer
O3	Molecular formula for Ozone
PCC	Pollution Control Committees
PGDM	Post Graduate Diploma in Management
pH	Potential of hydrogen; is a logarithmic scale used to specify the acidity or basicity of an aqueous solution
PM10	PM10 is Particulate Matter 10 micrometers or less in diameter
PM2.5	PM2.5 is Particulate Matter 2.5 micrometers or less in diameter
SCADA	Supervisory Control and Data Acquisition

SOX	Sulphur Oxides
SPCB	State Pollution Control Board
SPM	Suspended Particulate Matter
TOC	Total Organic Carbon
TSS	Total Suspended Solids
WHO	World Health Organization

EXHIBIT I: NEXT ENGINEERING — INFORMAL ORGANIZATION STRUCTURE AND PROFILES OF FOUNDERS



Profiles

Mr. Ronak Patel is an Electronics and Communication Engineer and has completed his post-graduation in the area of management. He had worked as a junior technician for 6 months in a software company, and he later joined a telecom company as a sales manager, where he continued for 2.5 years. As a director at Next Engineering, he looks after the business development of the company. Mr. Varun Patel is an Electronics and Telecommunication Engineer. He had initially worked with a power electronics company for a year and later joined a company that specialized in selling instruments for water and air pollution control. As a director at Next Engineering, Mr. Varun looks after the sales function of the company. Mr. Bhavik Patel is an Electronics and Communication Engineer. He had worked with Mr.

Ronak Patel in the telecom company for one year. Mr. Bhavik Patel looks after the finance and service functions of the company. Mr. Suprit Patel has completed his post-graduation in the area of management. Mr. Suprit Patel is Mr. Ronak's cousin, and had been involved in his family business before joining Next Engineering. Mr. Suprit Patel is mostly involved in relationship management and negotiations.

EXHIBIT II: WATER QUALITY MANAGEMENT

In India, the primary statutory organization for environmental protection is the Central Pollution Control Board (CPCB), which was created to maintain wholesomeness of the aquatic resources of the country[12]. The CPCB is the apex body and it is supported by the State Pollution Control Boards (SPCBs) at the state level and pollution control committees for union territories[13]. One of the key functions of the CPCB is to lay down and annul standards for the quality of water. On June 26, 2017, the CPCB[14] published general standards for the discharge of environmental pollutants, which detail the allowable pollutant levels for inland surface water, public sewers, land for irrigation, and marine coastal areas. By April 05, 2018, the CPCB had detailed industry specific effluent and emission standards[15]. In October 24, 2017, the Indian government has tightened standards governing the quality of water that sewage treatment plants (STPs) can discharge into water bodies and other sites[16]. In the article, the authors have discussed that these current standards are more liberal than those proposed by the ministry in 2015[17]. The ministry diluted the standards after receiving feedback that the draft norms were impractical and compliance would be too costly.

Water is classified into three major categories — human consumption, industrial use, and environment. The norms for pollutant levels for human consumption are much more stringent than those used for industrial purposes. The environmental water quality parameters are related to the quality of ambient water, which includes water bodies such as rivers, lakes, and oceans, and this is often defined by regulatory bodies to ensure environmental protection. The WHO produces international norms on water quality and human health in the form of guidelines that are used as the basis for regulation and standard setting, in developing and developed countries.

[12] For detailed list of acts, rules notifications regarding CPCB refer http://cpcb.nic.in/effluent-emission/
[13] For further details refer http://cpcb.nic.in/spcbs-pccs/
[14] For further details refer http://cpcb.nic.in/general-standards/
[15] For further details refer http://cpcb.nic.in/effluent-emission/
[16] For further details refer https://www.hindustantimes.com/environment/govt-tightens-standards-for-sewage-treatment-plants-to-fight-water-pollution/story-w3lX5WWxaMhqEPwbOhwpBL.html
[17] For further details refer https://economictimes.indiatimes.com/news/politics-and-nation/cpcb-to-bring-about-new-norms-for-sewage-treatment-plants-as-government-takes-steps-to-clean-up-rivers/articleshow/47650733.cms

Water quality is measured based on various parameters. These parameters can be classified into three major categories which are physical indicators, chemical indicators, and biological indicators. Physical indicators, as the name suggests, look at the physical attributes of the water. These include water temperature, odor, taste, total suspended solids, and total dissolved solids, among others. The chemical indicators are more specific in nature. These indicators require sensors, which have to determine the level of the pollutant and transmit that information to a control panel which records the data. The chemical indicators can be pH, BOD, and COD. On the other hand, biological indicators are used to gauge the presence or absence of certain organisms.

A typical water quality monitoring system involves the use of one or more sensors, a controller, communication systems, and display systems. In such a system, the sensor is immersed into the water source, where it records the pollutant levels and transmits that information to the controller. The data from the controller can be used by the technicians to monitor the pollution levels; based on output, the technicians may choose to alter operations to reduce the pollution levels. In certain conditions, the data from the controller is transmitted to a centralized panel through various communication media, and the results are displayed on a grid or a computer. The communication media may be wired or wireless, and the protocol used to share data depends on both, the sensor and the controller.

Source: Photo taken during a field visit

EXHIBIT III: NEXT ENGINEERING SOLUTION LIST

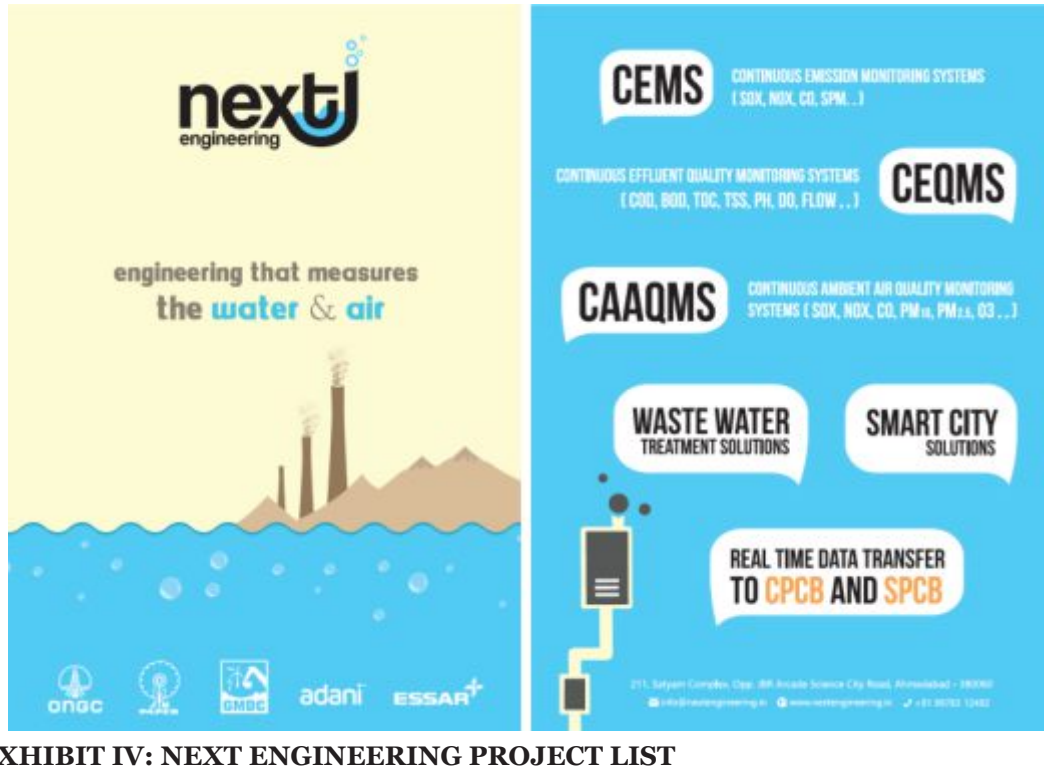


EXHIBIT IV: NEXT ENGINEERING PROJECT LIST

Source: Extracted from company documents

No	*Project Category*	*Number of Projects Executed*
1	Online Effluent Monitoring and Data Connectivity to CPCB and SPCB	32
2	Continuous Emission Monitoring System (CEMS) and Continuous Ambient Air Quality Monitoring System (CAAQMS) with Data Connectivity to CPCB and SPCB	11
3	Water Quality Analyzer, Ultrasonic Flow - Level Sensor and Process Analyzer	22
4	Real Time EQMS, CEMS, AQMS and CCTV Data Transfer to CPCB and SPCB	81
5	Waste Water/Effluent Treatment/Sewage Treatment and Primary Treatment Plant as per the Supreme Court Norms:	5

VENUS ENGINEERING WORKS: DIRECTIONS FOR THE FUTURE

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INTRODUCTION

The neighbourhood was booming with loud music, celebrating the incoming new year around midnight on December 31, 2013. At such a time Mr. Anand Mashruwala – MD, Venus Engineering, Ahmedabad, was immersed in deep sorrow as he stared at his mother on her death bed; she had been terminally ill for a while. He was suddenly overcome by mounting business pressures from various members of his family, apart from being stifled with insolvency and other throttling business challenges. There were many who lay waiting to usurp the dividends of his business, but very few who were willing to support him and his business. He further reflected upon the roller coaster ride his business had given him. He recollected how his grandfather had recounted stories about the inception of Venus Engineering Works in 1911. He wondered what 2014 would bring for him and his family business. He had been looking for an answers to important questions: How could he plan his succession; the business handover to his son, Anay? Should he opt for private equity or bring in a partner to invest in the business to achieve his vision 2025 — 'To become a one stop solution for clients'?

BACKGROUND

M/s. Venus Engineering Works has been manufacturing industrial valves since 1969. (About the Company, 2017) It has four generations of experience of continuous innovation. It has manufactured user-oriented products to bring immense durability to the life of the valve and to offer better services to their customers.

M/s. Venus Engineering Works has been recognised as one of the oldest and reliable industrial valve-manufacturers in India. It manufactured valves of exotic materials like Monel, Alloy 20, SS 316, SS 304, SS 316L, SS 304L, and Graded C.I. along with regular C.S. and C.I. valves with 100% radiography, and with third party inspections from M/s Lloyds, M/s TUV, and M/s Aker Kvaerner Power Gas Ltd., to mention a few, for many years. Venus was the largest valve manufacturer in this category in India and these valves were manufactured with third party inspections from M/s. TUV (refer exhibit 2 & 3 for details).

M/s. Venus Engineering Works was founded on the adage, 'Services that Count'. It continuously strived to offer its customers with valves which would serve their needs thoroughly for a long span of time, rather than just adhering to the specifications. They provided a very large basket of products to their customers. Their vision was to become a 'one-stop solution for their clients'**.** The organization was well equipped with skilled manpower and had a reputation for undertaking technically sophisticated and demanding first of their kind projects.

As an organization, it followed all principles and practices as per ISO 9001. Some of its quality assurance plans were beyond the requirements of standard specifications and were considered to be industry benchmarks due to their strong R&D team. They had sound facilities having required machines, tools, testing, and design (refer to Exhibits 1b and 1c).

THE GROWTH PHASE — THE JOURNEY BEGINS — 1911–1980:

Mr. Chimanlal Karsandas Mashruwala, grandfather of Mr. Anand Mashruwala and founder of the business, started the organization in 1911. It was one of the earliest importers of pipes, pipe fittings, and valves in eastern India, and had been flourishing in this industry since inception. Due to the monopolistic nature of the market and high demand of such products during World Wars I and II, the company minted huge profits and these profits were further invested in the expansion of business into high volume trading.

Later in the 1950s his son, Mr. Sharad C Mashruwala with his five brothers became a part of the family business and expanded the domain of the Mashruwala clan with many firms dealing in

pipe fittings, valves, flanges, and pipe trading. Along with his brothers, Mr. Sharad C Mashruwala established M/s. Venus Engineering Works in 1962, as a business dealing with the manufacturing of industrial valves and fittings. They focused on quality production and niche market customers to serve their tailor-made requirements. Although their volumes have not increased exponentially, still they had high profit margins.

As the business grew, it had its repercussions on the family dynamics. Mr. Anand Mashruwala mentioned that during certain conflicts, the role of his grandmother was very critical as a key decision-maker in order to keep the family and business united. His grandmother played an important role in resolving most of the business conflicts that arose in the family and thus kept the family united. The organization received many awards and endorsements during the 1970s, including the Indian Boilers Regulation Act (IBR approvals) in 1975. Mr. Anand S Mashruwala, the son of Mr. Sharad C Mashruwala joined the family-business in 1980. The year 1987 witnessed a re-constitution of the firm. As a result, M/s. Venus Engineering Works came under the sole ownership of Mr. Sharad C Mashruwala and Mr. Anand S Mashruwala.

MODERNIZATION PHASE — ENTRY OF ANAND MASHRUWALA

Mr. Anand Mashruwala joined the business soon after completing his graduation in commerce, followed by acquiring a degree in law. He had the option of taking up a job in the lucrative banking sector, or going to the United States for higher studies, but he chose to join the family business. He did not have any knowledge regarding the technical side of the business, so he found it very difficult to conduct business amid the major challenges faced by the company.

As soon as he joined, three of the key functional heads (marketing, production, and accounts) left the company and formed a new company in the same segment; additionally, there were labour concerns to be dealt with. From time to time he had differences of opinion with his father. He learned from experience and his law degree also helped him during these hard times. He was the first one in the family to automate processes using computers and other design software.

He focused on acquiring new customers while also serving old customers. Not only did Mr. Anand Mashruwala learn the importance of description and design in his business, but he also started using the latest technology of the time (AutoCAD) from 1995 onwards. This gave them an advantage over competitors and helped win a larger share of the market. He applied the guerrilla strategy in attacking competitors by lowering the prices and increasing the delivery time. Guerrilla strategy is an advertising strategy where unconventional tactics are used to attract the customers. This is different from traditional marketing using print media, television, or direct

marketing. Most of their newly acquired customers came to them due to their expertise in design precision, certified testing facilities, and their heavy investment in R&D and IBRs (Indian Boiler Regulation).

In 1987, there was a major family restructuring; the family got separated due to interpersonal and business conflicts. The reason was that four of his uncles did not want to continue in the manufacturing business after the death of his grandfather Mr. Chimanlal Mashruwala. The four brothers had different priorities and wanted to remain in the trading business only. During the late 1980s and early 1990s, Venus Engineering worked only on industrial valves and took control of a large share of the HVAC, fire protection, and cooling plants industry.

Since early 1990, Mr. Anand Mashruwala worked closely with the clients to understand their specific problems. (Home, 2017) He began manufacturing valves for highly erosive services of the mining sector, and extremely corrosive services of pure water plants and brine applications. In 1999, M/s. Venus Engineering Works was one of the pioneering industrial valves producers of India and one of the foremost companies in Gujarat to have ISO 9002 quality management certifications, apart from many other recognitions. Through the next ten years, M/s. Venus Engineering Works became a highly recognized name in the heavy chemicals and mining benefaction industry.

TRANSFORMATIONAL PHASE — ANAY MASHRUWALA ENTERS THE BUSINESS — 2008–2013:

Fourth-generation entrepreneur, Mr. Anay Mashruwala joined VEL in 2008. Being a mechanical engineer, he did his MBA in Family Business from Nirma University, Ahmedabad to eventually take his family enterprise forward. His father often used to regret being a Commerce graduate and not being able to exercise as much control on his workers as a mechanical engineer may have been able to. Anay's education eased his anxiety. Anay entered his family business in spite of his own personal and professional dilemmas. He had secured a lucrative job offer from a premium bank. But due to the motivation that his family gave him, and his own potential and inclination, he finally made up his mind to join his family business. He was aware that his initial rewards would be meagre, but they would eventually increase and he would be able to take his family business forward.

After keenly following the processes of manufacturing, he starting formulating his own designs complying with international standards. He started looking for newer customers who could help his current business to grow exponentially. He also started exploring foreign markets where he

struggled due to stringent inspection norms set by big customers like Rio-Tinto (an Anglo-Australian multinational metals and mining corporation (Rion Tinto Global, 2023)), and others.

Anay also wanted to move into diverse sectors like nuclear energy and the heavy chemicals industry. Being a new budding entrepreneur, he started facing skepticism about being a novice in the industry, including various human resources management challenges. Some of them are outlined below:

- There was no formal manpower planning process in place. The lead time to hire one individual for a mid-level position was around 6–7 months. It took him more than six months to hire a business development manager. As they didn't have any job description and specification, they found it difficult to identify required role competencies and measure them to hire the most competent people.
- As the business started growing, the need for skilled technical personnel also increased, but their retention was difficult due to higher wages offered by competitors.
- As there was no clear organisational structure, many conflicts used to happen among technical workers, supervisors, and managers.
- Mr. Anay Mashruwala started thinking about the different kinds of training that was needed for certain specific roles in the coming 1–2 years. But, because there was no formal training policy, it was difficult to align their business strategies with the training needs of the organization and the employees.
- Because the appraisals had been conducted by the father-son duo subjectively, there were incidents of conflicts and attrition.
- In the slack season, they wanted to lay off certain unskilled labourers, but they could not, due to a lack of understanding of relevant labour laws.
- Another major concern was related to managing many (more than 100) labour law compliances and the associated penalties for the business, upon not being able to comply.

In addition to the above human resource challenges, he also found it difficult to enter where his father didn't have network. Anay's father was a loving parent but also a shrewd teacher. He was eager to pass the baton of the business to Anay slowly and steadily. He gave his son the responsibility of finding his own new clients and held him accountable for all the positive and negative feedback from the clients. As a responsible son and businessman, as complimented by his father, Anay started learning the ropes of the trade.

In mid-2013, bitter conflicts related to their inheritance arose in the family (as shared by Mr. Anand Mashruwala); consequently, the business also suffered during this rough phase. Within a month, there was no money available for immediate investment and expansion. Secondly, infrastructure to attract clients from abroad was inadequate, although they had liked the product specification and pricing that VEL offered, to manufacture for them. Additionally, their steady sales declined due to the fluctuations in the mining industry. To add to their troubles, the clients who knew the family began to look for alternative vendors for supplying valves to them. Anay started looking for alternative sources of income. He also took up a part time job in academia. The Mashruwala family had some secondary sources of income in and around Ahmedabad, but it had now become inevitable to sell one of their properties to recover the losses and to grow the business. However, this would involve layoffs and retrenchments, the idea of which was creating much psychological stress for the family. An industrial estate was identified in Kuha as a new plant site for the company, but the distance that the workers would have to travel would increase by 4 km.

WHAT NEXT:

As Mr. Anand Mashruwala was wondering about what 2014 would bring for him and his family business, he received a call from Mr. Fizi Taku (MD of Precision Valve, Japan), who offered him INR 100 crores to expand his business, but with one condition — he would have to sell 60% of his private equity. Although the offer was very lucrative, Mr. Anand Mashruwala was not ready to sell his business to quickly overcome his financial crisis. When he was thinking about possible alternatives to overcome his business, financial, and family problems, he was not able to take decisions about the company and its future.

Exhibit 1a — **About the Industry:**

India has developed a burgeoning eco-system for the manufacture of valves, which has been led by major global companies who have set up operations in the country. The valves industry in India has grown significantly during the last decade, catering to the growing demands of the nation with reference to capacity and product capability. It has also flourished as a dominant entity in the global valves market. The valves market is categorized into — product type, and industry type. Under the product type categorization, the global valves market is further classified into pressure safety/relief valves, globe valves, gate valves, butterfly valves, reducing valves, control valves, plug valves, ball valves, diaphragm valves, and other valves. Under the industry type categorization, the global valves market is segmented into marine, oil and gas, petrochemical, coal, pulp and paper, mining, wastewater treatment, power, chemicals, petroleum, construction, water, and others. (Valves Market - Global Industry Analysis, Size,

Share, Growth, Trends and Forecast 2018 - 2026, 2018)

According to the recently published report by TechSci Research, "India Industrial Valves Market Forecast and Opportunities, 2020", India's industrial valves industry is largely dominated by organized manufacturers and hopes to witness double digit growth at a CAGR of 13% during the forecast period. Over the past two decades, many leading global valve manufacturers have recognized India as a high potential market for valves, and have thus entered the market. The industrial valves market was ready for immense growth from the financial year 2015-16 to the financial year 2019-20 as numerous projects came online to cater to the large pent-up demand in India. (India Industrial Valve Market to Register Growth at 13% CAGR Till 2020, 2020)

Since a large number of initiatives are underway to give a boost to manufacturing in the nation, and major developments have been declared to facilitate growth, India has garnered international attention for its industrial production and as a prominent market for valves. This has prepared the scene for the next level of growth in the sector. Organizations are now focusing their strategy on moving from B2B functions to tailor made project-based manufacturing so that they can become future leaders. Some of the major players in this market are the reasons behind the growing demand for valves, and the rising emphasis on the quality of valves has caused companies to produce innovative valves to sustain their profitability in the market. Which includes Honeywell International Inc., KITZ Corporation, Schlumberger Limited, Flowserve Corporation, Emerson Electric Co., Bürkert Fluid Control Systems, AVK Holding A/S, Rotork PlcGeneral Electric Company, and Goodwin International Ltd (Website details of the company provided in the Exhibit 4)

Exhibit 1b — M/s. Venus Engineering Works in 1911

List of Facilities:

- 9 machining centres
- One NC operated DRO controlled boring machine for machining larger sized valves up 56".
- 3 welding rectifier sets for metal overlaying and fabrication work
- 2 pillar drill machines
- 1 radial drill machine
- 1 lapping machine for super fine machining of trim materials.
- Overhead EOT crane covering an area of 2600 sq. mt. for assembly and transportation of materials.
- 4 grinding machines for tool dressing
- State of the art paint shop including grid blasting equipment for surface preparation
- Dedicated air compressor for painting of valves.
- Hydro and air testing facility to check the soundness of castings and also for final testing of valves.
- NDT facility: They had installed in-house state of the art 'non destructive testing facilities', which included radiography viewing facility, ultrasonic testing facility, magnetic particle testing facility, dye penetrant testing facility with ASNT qualified man power and ASNT approved procedures.
- Special tools and fixture for dimensional checks: 'state of the art' facility for checking various dimensions of valves, including the parallelism and angular measurements of flanges.

Quality Achievements

- Vacuum helium leak test for hard seated valves i.e. gate valves, globe valves, and swing check valves, wherein we have achieved leakage rates of less that 1* 10-7 using the hood method of testing.
- 100% radiography quality valves of non ferrous metallurgy like Monel.
- Hard seated valves for larger sizes like 600mm NB gate valves and globe valves tested for zero leakage.
- 100% chemical composition check, hardness check, surface finish check on all metal over-layed trim components.
- All the calibration requirements are regularly met.
- A history of around 25 years of zero complains on the quality front from the cliental.

Exhibit 1c — List of Facilities:

Exhibit 2 — Products and Services

Products and Services: Venus Engineering Works is one of the oldest and most trusted industrial valves manufacturers in India (Venus Engineering Works/Venu Valve, 2023). These valves were manufactured with third party inspections from M/s. TUV. The product range is very comprehensive with special purpose valves like pressure seal valves, bellow seal valves, multi port check valves, wafer type spring loaded check valves, valves with live load stuffing box, valves for cryogenic services, valves for vacuum services, valves for H_2S services in petroleum refineries angle valves for slurry applications for alumina industry etc. along with normal gate globe check ball butterfly diaphragm knife edge valves, foot valves and strainers. For many years, they have been manufacturing valves using exotic materials like Monel, Alloy 20, SS 316, SS 304, SS 316L, SS 304L, and Graded C.I., along with regular C.S. and C.I. valves with 100% radiography and with third party inspections from M/s Lloyds, M/s TUV, and M/s Aker Kvaerner Power Gas Ltd, to name a few. They are experienced in manufacturing valves from ½" through 48" size pressure ratings, from 150# through 1500# with actuations ranging from manual hand wheel, spur and bevel gear actuations, electric actuators, pneumatic actuators, and hydraulic actuators in our production range. They are found attached with this email photo of 400mm NB 300# 3 way angle valves which are specifically manufactured for the alumina industry. Each valve is 15' high and 2.5 tons in weight. We are proud to be among the few manufacturers internationally who have the technological know-how and experience in supplying this specific category of valves.

Exhibit 3 — Selected Clientele

Selected Clientele: They have supplied more than 3,500 valves for M/s. Utkal Alumina International, either directly or via various reputed Engineering, Procurement and Construction (EPC) contractors like M/s. F L Smidth Pvt. Ltd., and M/s. Hindustan Dorr Oliver Ltd.. They also executed Green Field Project Orders for M/s. Grasim Industries Ltd., and Vilayat EPOXY Project which included Stainless Steel Valves, IBR Approved Valves, and Valves for Vacuum Services. Another project they have completed is for M/s. Nirma Ltd., for their salt augmentation, wherein the valves were specially designed for an FDA approved plant to be fitted below the tank to be operated under a static load of 5 tons of salt column. Very recently they have completed 200% production capacity expansions at our works and also set up "State of the Art" Non-Destructive Testing Facility In-house with Ultrasonic Testing Facility, Magnetic Particle Testing Facility, Viewing Set up for Radiography Films, and Dye Penetrant Testing facility with qualified manpower.

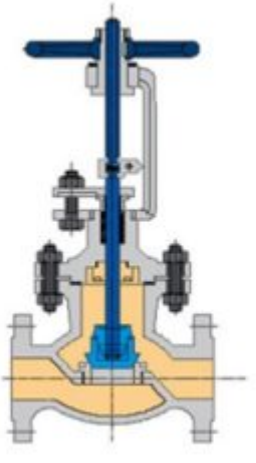
Exhibit 4 — Major Players in the Valve Market

Company Name	Website
Honeywell International Inc.	www.honeywell.com/us/en
KITZ Corporation	www.kitz.com
Schlumberger Limited	www.slb.com
Flowserve Corporation	www.flowserve.com
Emerson Electric Co.	www.emerson.com
Bürkert Fluid Control Systems	www.burkert.com
AVK Holding A/S	www.avkvalves.com
Rotork Plc.	www.rotork.com
General Electric Company	www.ge.com
Goodwin International Ltd.	www.goodwininternational.co.uk

These companies are involved in metal fabrication, industrial solution, flow control solutions for oil and gas, waste water, chemical processes, and industrial applications.

Exhibit 5 — Product Samples

***GATE VALVES** — Product Simple View*



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Valves Market - Global Industry Analysis, Size, Share, Growth, Trends and Forecast 2018 - 2026. (2018, March). Retrieved April 18, 2018, from Report Buyer: https://www.reportbuyer.com/product/5371624/valves-market- global-industry-analysis- size-share- growth-trends-and-forecast- 2018-2026.html

SOME INPUTS FOR THE TEACHING NOTE:

This case has described the journey of a family owned business over several years, and how it has made changes to meet the business challenges over the years. The case has provided insights about the business strategies devised over three generations as a way to grow and meet the diverse needs of various stakeholders.

Learning Objectives:

- Understand the nuances and concerns related to succession in family businesses
- Map the lifecycle of a company and identify the strategies adopted by the entrepreneur at each stage
- Identify risks and risk mitigation strategies (including leadership and succession management) adopted by the entrepreneur

Subject Areas: *Entrepreneurship, Strategy, Change Management, Succession Management*

AARTI GROUP: DISTRIBUTION STRATEGY FOR CEMENT

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ABSTRACT

Aarti Group was involved in the business of cement distribution of Tata Chemicals Limited in the central and north Gujarat regions. Price played a very important role in the final sales of the cement brand. Distribution accounted for a significant component of the overall delivered cost of cement. One of the biggest challenges in generating the sales of cement was designing an effective distribution system. Technology plays an important role in making cement distribution effective. The implementation of an ordering system led to improvement in efficiency throughout the distribution channel. Dealers played a pivotal role in cement sales as they were the faces of the brand for customers. To enhance the dealer network, branding and promotion among dealers played an important role. This case includes issues and challenges regarding designing the distribution system and promoting the brand among dealers. The case also includes a discussion related to enhancing the dealer network and retaining it.

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LEARNING OBJECTIVES

This case acts as a platform to discuss the challenges of cement distribution and brand promotion. It enables the instructor to achieve the following objectives:

(a) understand and develop an effective distribution system for construction products

(b) familiarize students with issues related to brand promotion among dealers

This case can be used in the following MBA compulsory and elective courses:

Compulsory Course: Marketing Management in the module on Distribution Management and the module on Brand Promotion

Elective: Business to Business Marketing

Aarti Group: Distribution Strategy for Cement

INTRODUCTION

Mr. Punit Agrawal, aged 34 is the owner of Aarti Group, a distributor of Tata Shudh, which is a cement brand owned by Tata Chemicals Limited. Aarti Group is located in Ahmedabad, Gujarat, India. Mr. Punit Agrawal was reviewing his distribution system on April 18, 2018. He had been facing some difficulty with the timely delivery of Tata Shudh, cement as well as with strengthening the dealer network. He had received a call from one of his dealers complaining about a delay in the delivery of cement bags. This was followed by a message from another dealer stating that he had cancelled the order as it mentioning. Further, he mentioned that *'the number of such complaints and cancellation of orders had increased during last four months*.' Tata Chemicals Limited had decided to curtail some of the territories of Aarti Group from June, 2018. He then started pondering on the probable options, either to look for an alternative distribution opportunity, or to enhance the current dealer network, thereby continuing with the business.

Bavandasji Agrawal, from Badmer, Rajasthan[2], came to Ahmedabad in the 1950s and started their business of trading and manufacturing textiles by starting a Hindu Undivided Family (HUF) named 'Rajaram Radheshyam'. Gradually, with the success of the textile business, the group ventured into chemical trading and other businesses like steel distribution,

[2] https://www.mapsofindia.com/maps/rajasthan/districts/barmer.htm

petrochemicals, finance, and construction. Further, with the expansion of the business, Bavandasji Agrawal divided the business into five clusters. (See Exhibit 1 for the organizational structure of Rajaram Radheshyam). One of the clusters became Aarti Group, that included eight proprietorship firms dealing in businesses related to chemicals, cement, and steel. (See Exhibit 2 for details).

CEMENT BUSINESS OF AARTI GROUP

Aarti Group was established in 1993 by Kamal Kumar Agrawal with the objective of trading in cement, and the business gradually diversified into textiles and chemicals. Initially, the group started trading in Ramada cement (acquired by L&T in the year 1998), as a distributor. The business grew in the first five years of its establishment. But, the group incurred a loss between 1998 and 2001, owing to — i) issues with textile export to Sri Lanka, because of the Tamilian war[3], ii) a loss[4] in stock market investments, and iii) a decline in demand for cement owing to the earthquake[5] in Gujarat in 2001. In addition, the group could not recover the the money it had lent on interest. In all, the group incurred a loss of ₹ 60 crores[6].

In 2001, with an intent to turn things around, the firm ventured into trading in Roofit[7] Cement of Roofit Industries, Mumbai. This venture did sustain as the nature of the product was different. It was a ready mixed plaster, made from a pre-mixed materials consisting of sand and cement in different proportions for various use cases. As it was costlier than the cements of other companies, the customers preferred to purchase other brands. In 2002, the firm decided to start the distribution of Tata Shudh, a cement produced by Tata Chemicals Limited, and marketed by ACC Cement.

BACKGROUND OF CEMENT INDUSTRY

The cement industry in India was one of the primary industries in India. The planned production of cement in India commenced in 1904 in Madras (now Chennai) by India Cement Ltd[8]. India was the second biggest producer of cement in the global market[9]. The country's per capita consumption stood at around 225kg, which was way below the world

[3] https://www.brookings.edu/wp-content/uploads/2016/07/sri_lanka_chapter.pdf
[4] Market Source
[5] After the Earthquake, http://indianexpress.com/article/opinion/columns/gujarat-earthquake-bhuj-quake-republic-day-4493438/, access on April 29, 2018
[6] Market Source
[7] Roofit Industries Ltd., https://www.bloomberg.com/profiles/companies/RGBP:IN-roofit-industries-ltd, access on April 29, 2018
[8] World Cement Production, http://shodhganga.inflibnet.ac.in/bitstream/10603/92453/11/11_chapter%203.pdf , access on April 29, 2018

average of 520kg per capita[10]. Different varieties of cement were produced back then, such as Ordinary Portland Cement (OPC) for construction of households, Portland Pozzolana Cement (PPC) for construction of dams and reservoirs, Portland Blast Furnace Slag Cement (PBFSC) for construction of main structures and in coastal areas, Oil-well Cement for drilling oil wells, Rapid Hardening Portland Cement to gain a higher rate of early strength development, Sulphate Resistant Portland Cement (SRPC) for concrete-steel constructions, and White Cement for general construction and decoration.

The cement industry in Gujarat was ruled by a few corporations such as Ambuja Cement, Ultratech Cement, and Sanghi Cement (see Exhibit 4 for details). According to Indian Brand Equity Foundation[11], the important drivers for the rise in demand for cement were low priced housing areas, infrastructure increase inclusive of the devoted freight corridors, airports, and ports, business real estate growth, smart cities, and the Swachh Bharat scheme.

TATA CHEMICALS LIMITED[12]

A part of the over $100 billion Tata Group, Tata Chemicals Limited was an international company with interests in corporations that focus on essentials for LIFE: Living, Industry, and Farm Essentials. The company was set up in Mithapur, Gujarat, in western India, in 1939 with a small plant to extract marine chemicals from the ocean. From there, it grew as a diversified company with operations in four continents. It developed R&D abilities in nanotechnology and biotechnology.

Sustainability was the core practice across all Tata Chemicals' activities, along with the company's social responsibility. The company's vision was to be a pacesetter in company sustainability, focusing on all three factors of 'people, planet, and income'.[13]

TCL's cement plant at Mithapur was set up to utilize the solid waste generated during the manufacture of soda ash. The vicinity around Mithapur was rich in limestone. Given the area's proximity to the ocean, salt was also available in abundance. Lime and salt were the main elements needed in the production of soda ash. The cement plant had a hooked up

[9] India's Cement Industry, https://www.jagranjosh.com/general-knowledge/summary-on-indias-cement-industry-cement-producing-states-and-plants-1493879454-1, access on April 29, 2018
[10] Cement, https://www.ibef.org/download/Cement-June-2017.pdf, access on April 29, 2018
[11] https://www.ibef.org/, access on April 14, 2023
[12] Tata Chemicals Ltd, http://www.tatachemicals.com/Asia/Products/Chemicals/Cement/Tata-Shudh, access on April 29, 2018
[13] https://www.tatachemicals.com/upload/content_pdf/tata-chemicals-yearly-reports-2018-19.pdf, access on April 14, 2023

capability of 1,500 tonnes per day and manufactured two varieties of cement with the emblem name Tata Shudh.

Shudh cement had already received a four percentage share in the cement market in Gujarat against tough opposition from Ultratech Cement, Ambuja Cement, Hathi Cement, Kamal Cement, and others. It was regarded as a superior product, perfect for developing the best possible creation. Shudh cement far exceeded the quality norms and specifications prescribed with the aid of the Bureau of Indian Standards[14].

DISTRIBUTION AND LOGISTICS OF CEMENT

Aarti Group was selling 12000 tons of cement per month with an annual turnover of around INR 65 crores in 2018. It dealt with 80 dealers, mainly in the regions of north and central Gujarat (see Exhibit 5). The total production capacity of Tata Chemicals Limited in Gujarat was 50000 tons per month in 2018. The demand in central and north Gujarat was 12000–15000 tonnes per month. According to Mr. Punit, cement was a commodity product that left with less scope for differentiation. Price played a very important role in the final sales of the cement brand. Further, the logistics and distribution of cement were the most important aspects when it came to generating sales. The cement distribution was freight intensive. Logistics constraints were quoted as a major reason for price disparity. Logistics accounted for a significant component of the overall delivered cost of cement. The details of the cost structure of cement are given in Exhibit 6.

The role of labour was also important in the distribution of cement. Once the material arrived at warehouse it was either transshipped to another vehicle or kept in the warehouse. In both the situations, the bags were handled manually by the labourers for loading and unloading.

Aarti Group worked as an intermediary between the manufacturer and dealers. It did not have any warehouse to store the cement (see Figure 1). Two types of channels were applicable in cement distribution, i.e., trade and non-trade. In the trade channel, there was no direct dealing between the customer and the company and there was always some intermediary between them. The trade channel included dealers who were ordering and receiving merchandise through the distributor (Aarti Group). Then, the distributor placed the order with the manufacturer, and the manufacturer then directly transported the

[14] https://www.services.bis.gov.in/php/BIS_2.0/bisconnect/knowyourstandards/indian_standards/isdetails, accessed on April 14, 2023
https://certification-india.com/bis/standards/, accessed on April 14, 2023.

merchandise to the respective dealers. Some other companies had warehouses, so they could store and deliver the cement more frequently and cost effectively to distributors and dealers (see figure 2). This mechanism skipped one or more entities in the actual movement of the commodity, which meant that the material actually reached the dealers directly from the cement plant. However, in that transaction there remained the role of at least one layer of a middle man or a channel. A partial or complete channel facilitated each transaction till the material reached the dealers/end users from the plant. Because different types of vehicles such as trucks, trailers, and tankers were used, and handling took place at each level, the cost component could also vary from transaction to transaction. The competitiveness of the cement business with respect to price, quality, timely delivery, promotional benefits, and branding posed challenges as well as opportunities for cement distributors.

The non-trade channel included direct transactional dealing between the company and the customer. While some agency or individual sometimes played the role of mediator or facilitator, the final deal remained between the company and the customer. There was ample scope of further classification within non-trade customers like ready mix concrete players, builders, housing societies, government agencies, private companies, and tile and block manufacturers. Some of the companies had divided it further between key customers and other regular customers. As a practice, the price and other terms of business varied from customer to customer for the same brand. The most important parameter other than price in this segment was timely delivery of material as per the requirements of customers. Customers used to buy in big quantity that demands better services in terms of timely delivery of products, sales promotion support, credit facilities, and branding support. Distribution and services played a pivotal role in success due to fierce competition among cement companies.

Aarti Group was required to make payments to Tata Company at the time of order placement, while the dealers paid to Aarti Group after 45 to 60 days of product delivery. Sometimes, due to delay in delivery of product, the end users did not pay the full amount of sale value to the dealers. The dealers in turn, did not pay the full amount of their sale value to the distributor which resulted into losses due to bad debts, amounting to ₹ 5 lakhs to ₹ 7 lakhs annually, for Aarti Group.

The gross margin of Aarti Group was ₹ 5 per bag (see Exhibit 5). Out of the gross margin, Aarti Group was spending ₹ 1 per bag on average in promotional schemes, and was incurring around ₹ 0.5 per bag for other administrative expenses. Aarti Group had not borrowed any finance and was running its business activity through its owner's invested capital. On average, Aarti Group was providing ₹ 1 per bag as interest on capital to its owner.

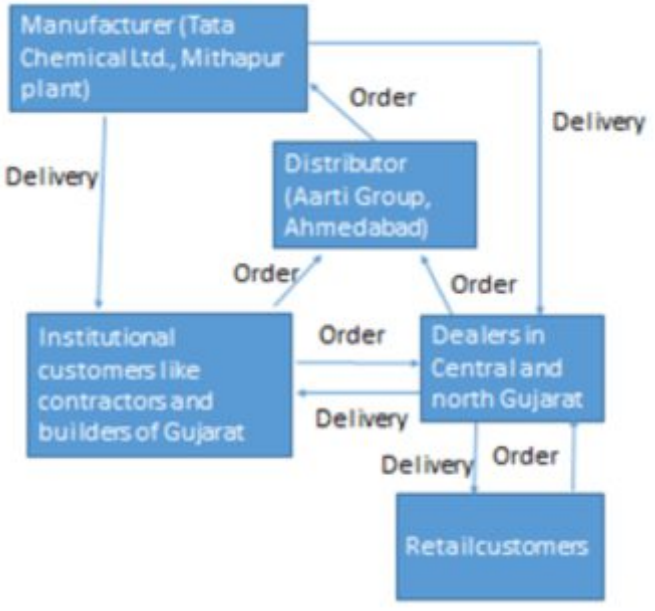

Figure 1 Distribution of Tata Shudh Cement in Gujarat

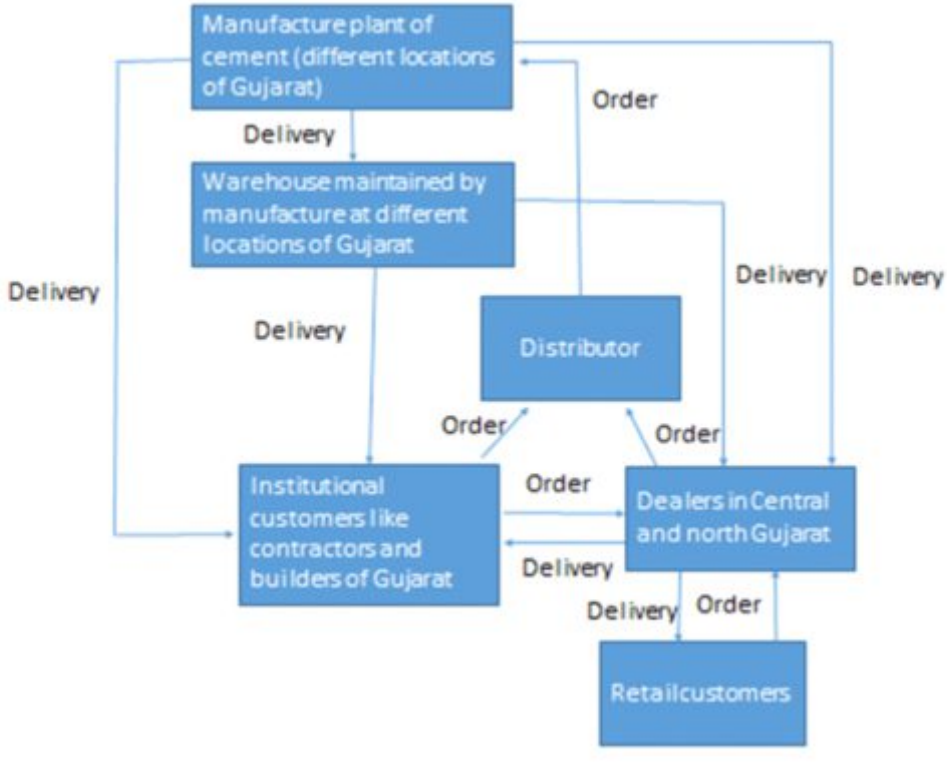

Figure 2 Distribution of Competitors' Cement Brands in Gujarat

PROMOTIONAL SCHEMES AND BRAND AWARENESS

In order to increase the brand awareness of 'Tata Shudh Cement', Aarti Group, along with the help of the company, was engaged in following promotional schemes:

- **Annual tour:** Every year, Aarti Group arranged a domestic or international tour for the dealers and their families. The dealers were eligible for the tour if they completed the purchase of a specific quantity of cement from Aarti Group. Dealers used to be very motivated to go on a tour, and consequently they used to complete their targets. This, in turn, would increase the turnover of the distributor.

- **Loyalty benefit:** The dealers were categorized as exclusive and non-exclusive. Exclusive dealers were those that sold only Tata Shudh cement, while non-exclusive dealers sold Tata Shudh cement and cement from other brands also. Aarti Group gave a loyalty benefit to exclusive dealers by giving ₹ 5 per bag as cash commission compared to the lower cash commission of ₹ 1 per bag that the non-exclusive dealers received. Additionally, ₹ 4 per bag cash commission of non-exclusive dealers was distributed among exclusive dealers. In totality, the exclusive dealers were getting around ₹ 7 to 8 per bag as commission while the non-exclusive dealers were getting just ₹ 1 per bag as commission. Thus, the company and Aarti Group encouraged dealers to exclusively sell Tata Shudh Cement.

- **Gifts:** Every two months, Aarti Group and TCL sent gifting items to dealers, to pass on to the customers. These gifts included things like calendars, caps, and pens, depending on the seasons. Each gift had a logo of Tata, to promote the product. The cost of these gifts was divided in the ratio of 40:30:30 between the company, Aarti Group, and the dealers respectively.

- **Annual meet**

- *Mason meet:* Masons had a direct influence on retail customers when it came to making the decision of purchasing cement. Therefore, to create brand awareness among masons, dealers were asked to arrange a mason meet once in a year. The meet was followed by dinner and distribution of gifts. The cost of the meet was borne by the company and Aarti Group in a ratio of 80:20.

- *Contractor and engineer meet:* Aarti Group also used to organize contractor and engineer meets to create the brand awareness and product awareness. This meet was sponsored by the company and the distributor in a 50:50 ratio.

Similar promotional schemes were also adopted by companies of other brand and its distributors (see exhibit 6). So, there used to be comparisons among different stakeholders, mainly masons and dealers, regarding the types of schemes and their quality. For example, dealers used to compare which distributor arranged tours to which destinations and what were the additional expenses borne by the dealers, what were the gifts distributed by the different distributors, where the annual meeting was organized, and also the quality of food and other activities arranged during the meet. If the stakeholders were satisfied, they spread a positive image of the distributor, which in turn helped the distributor to increase their turnover. But when dealers were not satisfied, they spread bad word of mouth in the market, which affected the trade of the distributor.

Additionally, the budget for all the promotional schemes was fixed. The company used to spend ₹ 20 per bag while Aarti Group used to spend ₹ 1 per bag, on average. Aarti Group was required to spend every rupee of promotional budget efficiently in order to satisfy stakeholders. At times this was difficult for Aarti Group, as it was not possible to stay ahead of its competitors in all its promotional schemes due to the cost involved. In a year, if a huge cost was incurred in organizing a tour, then the budget of other promotional activities was curtailed, as the total budget was fixed.

TECHNOLOGY INITIATIVE

In 2017, Tata Chemicals Limited was the only cement company that launched a web and mobile application called TCL ChemConnect. ChemConnect was the IT firm that provided technology solutions to Tata Chemicals Limited. The TCL ChemConnect application was for both, the distributors and the dealers. The objective was to manage e-commerce digitally. Dealers were using this application to submit their orders to distributors, and distributors were using it to submit their orders to the manufacturer. According to the Mr. Punit, ChemConnect brought many value additions to the value chain. Information was available at any time; the information was current, and relative to the situation. The available information was error-free throughout the value chain. Information could be accessed anywhere at any time. The information layout was designed to bring together data items which were used concurrently. The entities involved were able to add/modify/delete the information as required. Information could be shared with the next destination throughout the value chain. It was also possible to track the orders throughout the distribution channel.

According to Mr. Punit, only 50% of their 80 dealers were using the ChemConnect application. There was a certain resistance in changing from the traditional way of doing

things to transacting online. Dealers were finding it difficult to use the software, and it was time consuming for them. They were also afraid of making errors while using the software. Some dealers did not have internet availability. As a result, the sales of Tata Shudh Cement began to slip steadily. Mr. Punit was concerned about reducing drop rates of distributors, and at the same time he was also looking at enhancing the distribution network. He was wondering how to deal with distribution challenges related to timeliness as well as maintaining competitive pricing and also whether promotion and branding support to distributors would help to motivate them to continue business with Aarti Group as the dealer of Tata Chemicals Limited.

Exhibit 1: Organization Structure of Rajaraam Radheshyam Group

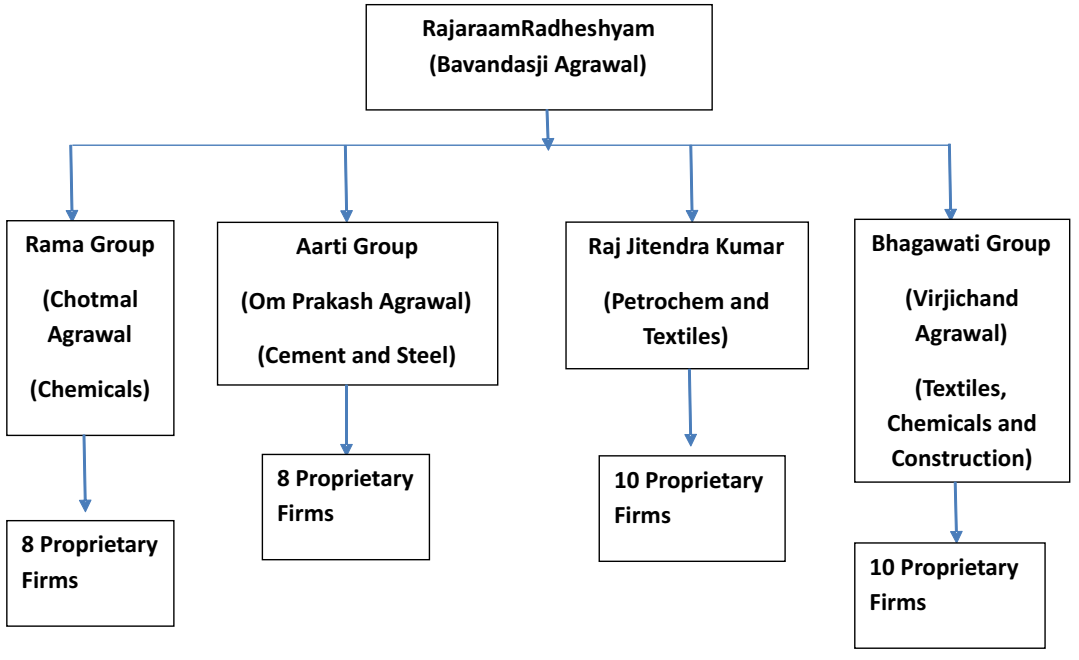

Exhibit 2: List of Firms Included in Aarti Group

Sr. No.	Name of the Firm	Business	Territory
1	Aarti Agencies	Cement Distribution	Central & North Gujarat
2.	K. Punit Marketing	Cement Distribution	North & North Gujarat
3.	Konnect Enterprise	Steel Distribution	Gujarat
4.	Aarti Associates	Adhesives Distribution	Gujarat
5.	Harekrishna Logistics	C & F Agents	Ahmedabad
6.	Kamal Textiles	Finance	Gujarat
7.	Aarti Active Agencies	Ancillary Distribution	Gujarat
8.	Aarti Enterprise	Finance	Gujarat
9.	Balaji Trading	Paint Distribution	Gujarat

(Source: Company Records)

Exhibit 3: Cement Industry in India

(In million tonnes)

Year	Consumption	Production
FY16	272	274
FY17	270	273
FY18	289	291
FY19	328	329
FY20 (estimated)	327	329
FY21E (estimated)	349	353
FY22E (estimated)	379	381

(Source: https://www.ibef.org/uploads/industry/Infrographics/large/cement-infographic-february-2023.pdf)

Exhibit 4: Cement Plants in Gujarat (2018-19)

Plants	Capacity (Million Tonnes)
Ambuja Cement Ltd., Ambuja Nagar	5.7
Ambuja Cement Ltd., Magdalla, Surat	1.56
Hi-bond Cement, Gondal	1.2
JK Laxmi Cement Ltd., Kalol	1
JK Laxmi Cement Ltd., Surat	1.35
Gujrat Sidhi Cement, Junagadh	1.2
Saurasthtra Cement, Porbandar	3.06
Sanghi Cement, Kutch	4.1
Shree Digvijya Cement, Sikka	1.2
Sparta Cements, Bhuj	1
Tata Chemical Ltd., Mithapur	0.5
Ultratech Cement, Sewagram, Kachchh	2.4
Ultratech Cement Ltd. (Gujarat Cement Works), Amreli	6.4
Ultratech Cement Ltd., Jafrabad	1.45
Ultratech Cement Ltd., Magdalla	0.75
Ultratech Cement Ltd., Wanakbori, Kheda	2.4
Vadraj Cement, Mora, Surat	6

(Source: https://ibm.gov.in/writereaddata/files/07072020143800Cement_2019.pdf)

Exhibit 5: Distribution Network of TATA Shudh Cement

Sr. No.	Name of the Distributor	Territory
1.	Briz Marketing	Junagadh, Porbandar, Gir
2.	JV Limited	Rest of Saurashtra
3.	Kamlesh Traders	North Kutch
4.	Vardhman Traders	South Kutch
5.	Aarti Agencies (Aarti Group)	Central Gujarat
6.	K Punit Marketing (Aarti Group)	North Gujarat
7.	Shivshakti Trading	Surendranagar

(Source: Company Records)

Exhibit 6: Cost break up of TATA Shudh Cement per bag (50 Kg.)

Particulars	Amount per bag (50 kg) in ₹.
Clinker	110
Packaging	5
Freight	60
Advertisement/Promotion	20
Distributor and Dealer Commission	10
Pre Tax Cost	205
GST @ 28%	57.4
Total Cost	**262.4**

(Source: Company Records)

Exhibit 6: Comparison of Branding Programmes among Competitors

Sr. No.	Particulars	TATA Cement	Ambuja Cement	Ultratech Cement
1.	Availability (Production)	50,000 tons/month	2,50,000 tons/month	6,50,000 tons/month
2.	Capacity Utilization	95%	80%	75% to 80%
3.	Visibility (Wall paints and Hoardings)	10,000 ft.	30,000 ft.	5,00,000 ft.
4.	Television Ads.	×	✓	✓
5.	Newspaper Ads.	×	✓	✓
6.	Sponsorships	×	✓	✓
7.	Promotional Activities	✓	✓	✓
8.	Laboratory Testing	✓	✓	✓
9.	Branding/Promotion Budget	₹20/bag	₹20/bag	₹20/bag

(Source: Company Records)

NIRAV POLYMERS: EVALUATING A SOLAR POWER PLANT USING CAPITAL BUDGETING

Prof. Ritesh Patel*
Prof. Khyati Shah**
Prof. Nirmal Soni***
(Corresponding Author)

In April 2018, Mr. Nirav Patel, Managing Trustee, Nirav Polymers had a proposal of 200 kilowatt (kw) Grid Connected Rooftop Solar PV Plant. This proposal would result in an annual saving of ₹ 21,00,000 in the total electricity cost of Nirav Polymers. For quite some time, he had been exploring options to save the electricity cost. On the basis of initial analysis of the solar rooftop plant, he thought of setting up a Rooftop Solar PV Plant with a capacity of 200 kw power per annum. Nirav estimated that with the use of 1kw, Nirav Polymers could generate approximately 1500 kilowatt hours (kwh) per annum and could save ₹ 1400[1] on electricity cost. Despite this saving, he was not sure whether the investment was worth it.

BACKGROUND

Nirav Polymers began its operations in 2012 at an industrial estate in Sanand, located around 30 kilometers from Ahmedabad, (Gujarat, India). Mr. Babubhai Patel, the founder of Nirav Polymers started it in the form of a family non-charitable trust. Mr. Babubhai Patel and Mr. Nirav Patel were the

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[1] Rs. 1.00 = US$0.016

managing trustees and beneficiaries of Nirav Polymers, having stakes of 51% and 49%, respectively. The unit was engaged in the manufacturing of a variety of polymer bags such as Cement Bags, Fertilizer bags, Sugar Bags, Chemical bags, Detergent Bags and Salt bags. Nirav Polymers was 9001:2014 ISO certified.

The unit was spread over a 14000 square Yard, plot strategically located at Sanand situated on the Ahmedabad–Viramgam highway. It had its manufacturing unit, corporate office, quality control lab, and storage area on the same premises.

The company owes its origins to Nirav Laminates that had commenced its operations in the year 1991. It was also started in the form of family non-charitable trust (a trust which does not work for the social charity), by Mr. Babubhai Patel and his brothers for manufacturing of variety of polymer bags mentioned above. It was their uncle who had completely supported them and helped them start Nirav Laminates as he found that there was a requirement of such products for businesses carried out in and near Ahmedabad. However, Mr. Babubhai Patel split from Nirav Laminates in 2014, and completely shifted his focus to Nirav Polymers.

In 2014 Mr. Nirav Patel, son of Mr. Babubhai Patel, completed his MBA in Family Business and Entrepreneurship from Nirma University, Ahmedabad, and joined the company

The annual turnover of the unit was Rs. 17.25 crore in March 2018. It supplied its polymer bags mainly in the states of Gujarat and Rajasthan. Nirav Polymers had a production capacity of 1,50,000 polymer bags per day, and it was operating at full capacity. The unit procured most of its orders by bidding online for tenders of various companies at the beginning of the year. These online tenders were usually open for a period of one to two hours. All the bidders were required to bid within this time frame only. The bidders could see their ranking based on the price quoted, on a real time basis. In order to get the tender, one always tries to be at least in the top five ranks. These tender based contracts remained valid only for one year.

MANUFACTURING AT NIRAV POLYMERS

Nirav Polymers used a batch wise production method where the raw material was transformed into finished products through different processes as shown in Exhibit-1 (Manufacturing Process Flow Chart). The production was done according to the order received from the customer, in keeping with their customization requirements, such as their logo, their chosen size and colour, and other such parameters. The production unit functioned in two shifts of 12 hours each.

ELECTRICITY COST

Nirav Polymers depended on Uttar Gujarat Vij Company Limited (UGVCL[2]) to run its machines, office and residential quarters provided free of charge to the workers employed by the unit. Most of the workers hailed from the states of Uttar Pradesh and Bihar. These workers were provided free of cost electricity and water facilities for their residences. The annual cost of electricity to Nirav Polymers was whopping ₹ 2.4 crore.

ROOFTOP SOLAR POWER PLANT

Nirav received a proposal for setting up a Rooftop Solar Power Plant from a supplier. The Government of Gujarat provided the facility of Grid Connected Rooftop Solar PV Plant as part of its green energy campaign. The Rooftop Solar Power Plant was available from the Ministry of Energy, Government of Gujarat, for residential, commercial, and industrial areas. The 200kw Grid Connected Rooftop Solar PV Plant could generate 1500kwh power per annum and reduced the emission of CO_2 by 146 tons per annum[3]. Hence, Nirav Polymers could save ₹ 1400 on electricity cost with the use of 1kwh, which would lead to annual savings of ₹ 21,00,000.

Every year the capacity of power generation by the 1500kwh Rooftop Solar Power Plant would degrade by 1% (maximum). The life of the project was considered to be 25 years. The operating and maintenance cost for the plant would be 1% of the total cost of the solar plant. Further, the operating and maintenance cost was subject to appreciation by 5% every year, as compared to the previous year. Apart from this, no other expenses were involved in running the plant. The plant could be installed in the factory premises as the required space of 10 square metres was available. The project cost was ₹ 42 per watt. Therefore, the total cost of the 200kw Solar Plant was ₹ 84,00,000 covering the materials such as photovoltaic (PV) solar modules, module mounting structure, string inverter, LT panel, cable, and accessories.

INVESTMENT REQUIRED

The total investment required for setting up the project was ₹ 84,00,000. Nirav had planned to pay out ₹ 29,00,000 from owned funds, and the remaining amount through a bank loan [See Exhibit 2]. The bank loan could be obtained at an interest rate of 11.20% per annum for 5 years. The installation of the solar plant would be done by an authorised agency from the

[2] Uttar Gujarat Vij Company Limited is a Government of Gujarat Company providing electricity in four districts of North Gujarat

[3] Referred from http://www.solarmango.com/in/tools/co2-emission-reduction-results/ as on 27-04-2018, 4:26 pm

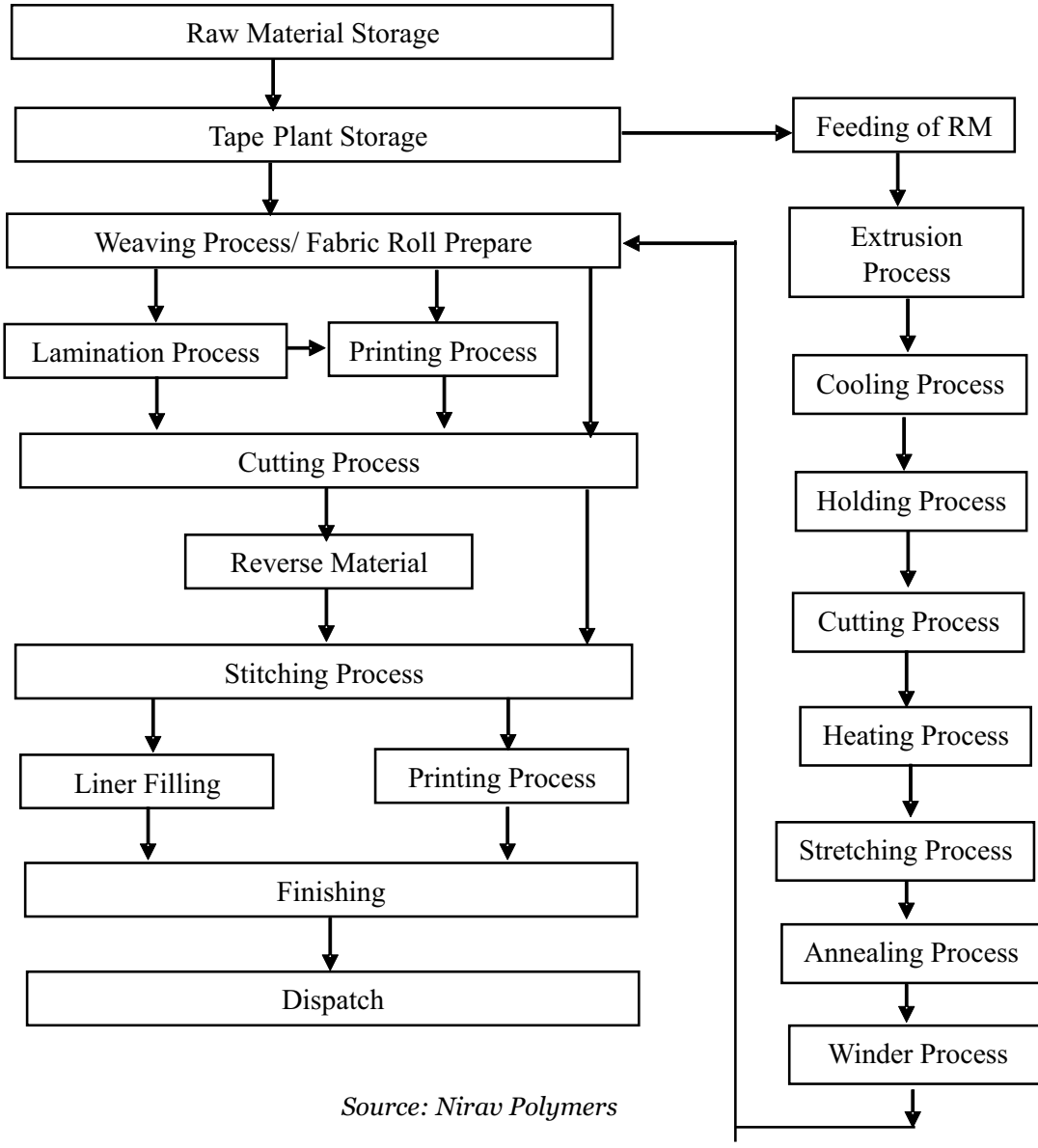
Ministry of Energy, Government of Gujarat. No additional investment would be required. The salvage value of the plant at the end of its useful life was estimated to be ₹ 84,000. The applicable tax rate for Nirav Polymers was 30.9%.[4]

FINAL DECISION

Nirav Polymers could end up saving ₹ 21,00,000 per annum on its electricity cost if it accepted the proposal for installing a solar plant that had a capacity to generate 1500kwh power per annum. Though, he found the proposal attractive and beneficial, he wanted to ascertain the total benefit of accepting the proposal. He will decide after carrying out a feasibility assessment.

[4] Referred from https://www.taxmann.com/blogpost/2000000305/budget-2018-19-tax-rates-for-ay-2019-20.aspx as on 27-04-2018, 3:25 pm

EXHIBIT 1: MANUFECTURING PROCESS FLOW CHART



Source: Nirav Polymers

EXHIBIT 2: CAPITAL STRUCTURE

Source	**Amount ₹**
Equity	2900000
Debt (Bank loan)	5500000
Total	**8400000**

Source: Compiled by the authors.

VENUS ENGINEERING WORKS: SUCCESSION PLANNING AND STRATEGY

Prof. Amola Bhatt*
Prof. Bhajan Lal**

On April 1, 2018, Anand Mashruwala, the proprietor of Venus Engineering Works (VEW) based in Ahmedabad, in the state of Gujarat, and specializing in manufacturing industrial valves, spoke to Anay, his son, about the potential geographical expansion of VEW. Although both of them agreed on the idea of expansion, they had differing views on how it should be approached. While this was significant, Anand was preoccupied with the question of when and how he should pass the business's reins to his son. He had felt that his own experience of taking over from his father was not ideal. With a century-long history of succession from one generation to the next, the process, circumstances, and experiences associated with each succession varied significantly.

DETAILS OF THE COMPANY AND THE INDUSTRY

Venus Engineering Works was a prominent manufacturer of industrial valves in India. Its specialty lay in catering to the specific requirements of industries such as alumina, mining, heavy chemicals, colours, and pigments. Valves, which are devices used

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to control liquid flow, were segmented based on type and industry served (see Exhibit 1). VEW began as a trading firm, pioneering the import of pipes, pipe fittings, and valves to Ahmedabad in 1911. The Mashruwala family established VEW in Ahmedabad in 1962, and began producing industrial valves in 1969. VEW was among the few manufacturers with the specialized expertise required to handle highly erosive services in the mining and heavy chemicals industry.

According to a 2018 report by Transparency Market Research, there has been an increase in demand for high-quality industrial valves, compelling valve manufacturers to produce advanced valves to maintain profitability and market share. Some of the global competitors in this industry include Honeywell International Inc., Emerson Electric Co., KITZ Corporation, Bürkert Fluid Control Systems, Schlumberger Limited, Flowserve Corporation, AVK Holding A/S, Rotork Plc, General Electric Company, and Goodwin International Ltd (see Exhibit 2).

The Indian industrial valves market was valued at USD 2731.45 million in 2022 (India Industrial Valves Market – Industry Size, Share, Trends, Competition, Opportunity and Forecast, 2018-2028). According to this report, the oil and gas sector, with a market share of 25.77% in 2022, was the most dominant industry using valves. Additionally, the rapid urbanization, localization of products, and increase in FDI inflows into India were expected to drive the industrial valves market's growth in the oil and gas sector. Recognizing the importance of the industry, the Government of India took steps to create an ecosystem for valve manufacturing and started incentivizing small and medium scale enterprises. The market demand also encouraged many major international players to enter the Indian market. Several international players decided to utilize India's available resources and use them as sourcing hubs to expand their businesses in India. This, in turn, helped Indian valve manufacturers expand their presence in the market.

Venus produced valves using exotic materials such as Monel (nickel-copper alloy) and Alloy 20 (a stainless steel alloy containing less than 50% iron) with third-party inspections from M/s Lloyds, M/s TUV, and M/s Aker Kvaerner Power Gas Ltd. The company became the largest manufacturer of valves in this category in India. Venus's comprehensive product range included special purpose valves that helped the company meet the specialized needs of petroleum refineries, alumina industries, and others.

Venus was one of India's oldest valve manufacturers, holding Indian Boiler Regulation (IBR) certifications since 1975, which are still valid today. The IBR certification was mandated by

the Indian government for all materials and equipment manufactured in India or imported from other countries. Venus also had the ISO 9001 certification for over 15 years, and was in the process of implementing ISO 14001, and OSHAS 18001. The company had extensive experience in manufacturing actuator operated valves and had supplied them for many projects across India for more than a decade.

Venus had established relationships with reputable clients such as Nirma Ltd., Grasim Ltd., Tata Chemicals, and Hindalco Industries. Moreover, the company was a registered vendor to various renowned consultants including M/s. SNC Lavalin, M/s. Uhde, M/s. Fichtner, M/s. JACOBS, M/s. Mott MacDonalds, M/s. Tata Projects Ltd, and M/s. Hatch Ltd. VEW produced a special category of valves to meet the specific needs of its clients, as shown in Exhibit 6. To meet the increasing demand, Venus had expanded its production capacity by 200% and established a state of the art in-house non-destructive testing facility. The facility included ultrasonic and magnetic particle testing, a viewing setup for radiography films, and dye penetrant testing, all manned by qualified personnel.

THE EARLY YEARS

The story of Venus Engineering Works (VEW) began in 1911 when Chimanlal K. Mashruwala, the grandfather of Anand Mashruwala, imported pipes, pipe fittings, and valves from the Eastern Indian Company in Ahmedabad. Later, his son Sharad, a Law graduate, joined the family business in the 1950s and expanded its operations to include similar products. In 1962, Sharad and his brothers established VEW, the manufacturing arm of the business, which dealt in industrial valves and fittings. While the male members of the family were actively engaged in the business, the female members also played a significant role in the decision-making process. The involvement of the mother was particularly noteworthy in this regard.

The first succession occurred when Sharad and his five brothers took over the reins of the business from their father. After 1962, manufacturing and trading went hand-in-hand, complementing each other. While Sharad and two of his brothers focused on manufacturing and stayed in Ahmedabad, the other three brothers who were involved in trading relocated to Mumbai, the country's industrial hub. In 1979-80, one of the brothers decided to part ways, and the major responsibility for manufacturing fell on Sharad.

THE THIRD GENERATION

Anand, a commerce and law graduate, and son of Sharad Mashruwala, joined the family business in 1980. It was then that the first restructuring of the business occurred, with a focus on manufacturing and trading. Despite being a non-technical person, Sharad forced Anand to join the business and did not allow him to take up a corporate job. Anand was not previously introduced to the company by his father and faced significant resistance from the organization's employees when formally inducted. Most of the resistance was due to his non-technical background and lack of experience.

A significant reorganization of VEW occurred in 1987 after Chamanlal's demise, with the manufacturing and trading arms of the business getting separated. Despite labour problems, Sharad and Anand retained the manufacturing arm, while the trading arm was handed over to the other brothers who were partners in the family business. The main reason for retaining manufacturing was Sharad's emotional connection with the business. Anand was given complete freedom to manage the business at VEW, which was going through a tumultuous time, following the founder's death. The plant was shut down for six months due to the ongoing family restructuring and negotiations, and labour issues. As a result, the head of production, marketing, and accounts resigned and started a new company, giving tough competition to Venus. There was a liquidity crunch in the company, and Anand had to be innovative to combat the new competition. He reduced margins and bid at extremely low prices, but deliberately quoted longer delivery schedules, which posed a significant challenge to the new competitor. As a result, many small competitors were forced to close down their business.

Anand contributed to the organization's growth through innovative strategies, such as investing in the soft part of the organization rather than hard machinery and plant. His ability to identify market situations and opportunities to move from a saturated market to a niche market was remarkable. He realized that the traditional industrial client market was not profitable and decided to extend his expertise to supplying industrial valves to the mining and heavy chemicals industries. He also invested in patent-related knowledge resources to expand into new markets, and exported Venus's current products, which had a quality and cost advantage. In spite of the initial disapproval from the labour and employees of Venus, he had turned the company into a reputable organization.

THE FOURTH GENERATION: ANAY'S INTEGRATION

To herald the entry of the fourth generation into the business, Anand Mashruwala, the founder of the company, planned in advance for his son Anay's integration into the business. Anand recognized the lacunae he had experienced when he joined the organization and invested in Anay's education to prevent similar issues for his son. He ensured that Anay had an engineering degree, and also admitted him to a business school with the vision of making Venus a global firm.

Anand's foresight extended to ensuring a smooth transition of leadership within the organization. To that end, he also made sure that Anay would not face resistance from the employees of the company. Anay's interest and enthusiasm for the business were evident from an early age. He started visiting the manufacturing facility at the age of 12 and attended his first marketing meeting at 15. During his MBA, Anay interned at Virgo Valves, where he learned about the valve industry and different functions like manufacturing, marketing, and sales.

After completing his MBA, Anay took up a job with Virgo Valves & Controls Ltd. Initially, he was interested in joining a banking job, but his father motivated him to join the family business by highlighting the long-term benefits. Anay's mother also supported this decision. With his mechanical engineering and management degree, Anay was well-suited to take over the reins of the business.

Anand's well-planned approach to Anay's entry into the organization made his formal entry in 2008 easier than his father's. Anay brought his ambitions to the business, such as developing a 54-inch valve, while his father's ambition had been limited to making a 24-inch valve. Anay was always on the lookout for new business opportunities, and was initially tasked with marketing to existing clients, and generating leads.

Anay and his father shared the workload, with Anay focusing on the market for ten to twelve days every month, while his father managed production and other functions. They also recognized the changing market segments, with the textile industry dominating in the 1980s, shifting to the air conditioning industry (now HVAC industry) in the 1990s, and then focusing on the mining industry and heavy chemical industry.

Mrs. Mashruwala: Integrating Across Generations

The Mashruwala family was primarily held together by the female members, with the eldest lady of the household assuming a passive but influential role in both, the family and business decision-making processes from the early stages of the family business. Anay stated that his mother, although a homemaker and not actively involved in the business, possessed a deep understanding of the industry because she had always belonged to a family of businessmen, both before and after her marriage. She had a natural aptitude for comprehending the flow and generation of money within the business, as well as an innate grasp of finance and human resources. She regularly received information from her husband and son, and engaged in triangulating that information, while also contributing to discussions on areas requiring critical decisions. Given the family's history of decision-making by majority, her input was sometimes the deciding factor, and both Anand and Anay credited her with contributing significantly to their problem-solving abilities.

THE WAY FORWARD

Anand was responsible for making all key decisions related to purchases, sales, finance, production, and operations to date. He continued to be involved in the company and visited the plant whenever required by his son, Anay. Although he had other properties to take care of in Ahmedabad, Anand, who was 62 years old and still active, wanted to serve as a mentor and advisor to the company while Anay focused on marketing and sales, which he had been managing satisfactorily. Anand was pleased to see the growth and success of Venus Engineering Works.

Together, the father and son discussed the market expansion strategy to acquire international customers. According to industry officials, the economic growth of the country and the establishment of large power and petrochemical units had created significant demand for valves. The global valves market was valued at $60 billion in 2014 (Economic Times, 2014). Anay and his father, with the approval of Anay's mother, had set a new goal to acquire international customers by 2018. However, they lacked prior experience in international marketing. They considered changing the aesthetics of the plant to attract international customers, as the current design was typical of a small shop-floor-based unit and not up to international standards.

Anand insisted that Anay visit and regularly participate in international trade fairs, exhibitions, seminars, and conferences related to the industry to spearhead the

internationalization of the business. They also discussed the importance of obtaining an international certification to expand Venus into the global market. Anay proposed recruiting fresh graduates for domestic demands and paying them a monthly salary of less than INR 20,000. However, Anand disagreed with this and was in favour of hiring an experienced marketing professional.

While discussing these matters, Anand wondered whether he could trust his son to handle the entire business as it became more demanding. Nonetheless, he acknowledged that this transition would have to occur at some point in time.

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ACKNOWLEDGEMENT

We sincerely extend our gratitude to Mr. Anand Mashruwala and Mr. Anay Mashruwala for sharing their journey and experiences, and giving us the opportunity to develop a case intended for academic purposes.

EXHIBIT 1: CLASSIFICATION OF INDUSTRIAL VALVES

Types of Industrial Valves	Types of Client industry
- Pressure reducing valves - Safety/relief valves - Control valves - Gate valves - Butterfly valves - Diaphragm valves - Plug valves - Ball valves	- Oil & Gas - Power - Chemicals - Marine - Petroleum - Nuclear - Coal - Construction

EXHIBIT 2: PROMINENT COMPANIES OF THE VALVES INDUSTRY

Name of Organisation	**L&T Valves Limited**	**Emerson Electric Co**	**Honeywell International Inc.**	**Christian Bürkert GmbH & Co. KG**	**General Electric Multinational conglomerate company**
Establishment Year	1961	1890	1906	1946	1892
Products	Butterfly Valves, Ball Valves, Gate, Globe & Check Valves, Non-Ferrous Valves, Plug Valves, Control Valves	Control Valves, Isolation and Shutoff Valves, Solenoid Valves, Pressure and Safety Relief Valves, Regulators, Actuator, Controllers and Instruments	Actuator 3-pt for zone control, 6,5 mm 180/300 N, M6410/M7410, Actuator 0/2.10V for zone control, 90/180/300 N, M7410E,	Solenoid valves, process and control valves, pneumatics and process interfaces, sensors, transmitters & controllers, MicroFluidics, MFC/MFM, solenoid control valves	Check Valve. Globe Valve. Gate Valve. Ball Valve. Y Type Globe Valve. Y Type Strainer.
Head office	Chennai	St. Louis, Missouri, United States	Charlotte, North Carolina, United States	Ingelfingen, Germany	Boston, Massachusetts, United States
CEO	S. Kalyanaraman	Lal Karsanbhai	Darius Adamczyk	Dr. Udo Gais, Frank Hils	H. Lawrence Culp Jr
Revenue (latest years)	INR 500 cr	$16.785B	$5.375B	641.0 million euros	US$ 74.196 billion
Subsidiaries	Larsen & Toubro	Rosemount Inc., RIDGID, Aspen Technology, MORE	Honeywell Aerospace, UOP LLC, Notifier, MORE	NA	GE Healthcare, GE Aerospace, GE Digital, MORE

Product Image

(Source: https://www.lntvalves.com/, https://www.emerson.com/en-in , https://www.honeywell.com/us/en, https://www.burkert.com/en, https://www.ge.com/)

EXHIBIT 3: MISSION STATEMENT: VENUS ENGINEERING WORKS

"To Be Driven by Innovation with A Single Motive to Achieve Highest Level of Customer Delight by Providing Highly Customized Products at Genuine Prices."

(Source: Company Website)

EXHIBIT 4: WORKS

(Source: Company Website)

EXHIBIT 5: PRODUCT SAMPLE VIEW

Gate Valves

(Source: Company Website)

EXHIBIT 6: CUSTOMIZED PRODUCTS

Client Name	Product/ Project Name	Product Specifications
M/s. Utkal Alumina	3 way angle valves	400mm NB 300# 3 way angle valves 15' high 2.5 tons in weight
M/s. Grasim Industries	Green filed project orders Vilayat EPOXY Project	Stainless Steel valves IBR approved valves Valves for vacuum services
M/s. Nirma Limited	Salt augmentation Project	Fitted below tank Static load of 5 tons of salt column

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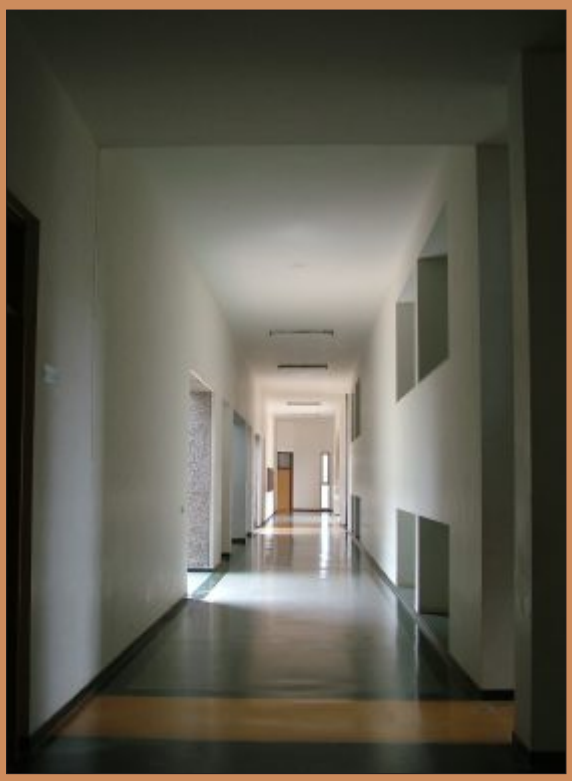

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