

An Organization Study Report of
BHARAT HEAVY ELECTRICAL LIMITED [BHEL]
(18MBAOS307)

Submitted by
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1CR19MBA03

Submitted to
VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI



In partial fulfillment of the requirement for the award of the degree of
MASTER OF BUSINESS ADMINISTRATION

Under Guidance of
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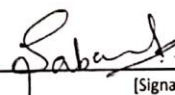
This is to certify that **Mr. ABHISHEK M R** bearing **USN 1CR19MBA03** is a bonafide student of Master of Business Administration of our Institution during 2019-21 batch. The organization study report on **BHEL** is prepared by him under the guidance of **Mrs. Sabeha Mufti**, Assistant Professor, in partial fulfillment of the requirements for the award of the degree of Master of Business Administration, affiliated to Visvesvaraya Technological University, Belagavi Karnataka.


Signature of the
Guide

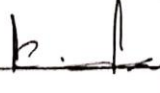

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Viva-voce Examination:

Internal Examiner:  30/9/2020
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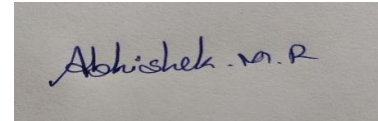

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External Examiner:  30/09/2020
[Signature & Date]


[Name, Designation & Affiliation]
of Technology

DECLARATION

I, **Mr. Abhishek M R.** bearing USN 1CR19MBA03 hereby declare that the organization study conducted at **Bharat Heavy Electrical Ltd [BHEL]**. is record of independent work carried out by me under the guidance of **Ms. Sabiha Mufti** faculty of M.B.A Department of CMR Institute of Technology, Bengaluru. I also declare that this report is prepared in partial full fillment of the university Regulations for the award of degree of Master of Business Administration by Visvesvaraya Technological University, Belagavi. I have undergone an organization study fora period of four weeks. I further declare that this report is based on the original study undertaken by me and has not been submitted for the award of any degree/diploma from any other University/Institution.



PLACE; Bangalore

Signature of the student

Name; ABHISHEK M R

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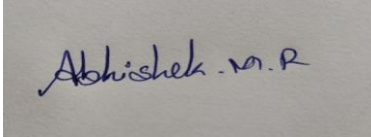
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A rectangular box containing a handwritten signature in blue ink that reads "Abhishek M. R."

Place: Bangalore

Signature of the Student

Date:

USN:1CR19MBA03

ACKNOWLEDGEMENT

It is gratitude and great pleasure to thank the beloved once for helping and motivating me for doing this internship report a successful one.

I would firstly like to thank CMRIT, Prof, Sandeep Kumar M HOD – department of management studies for encouraging in doing the internship by seeing that all the formalities are being followed. And, to my internal guide Ms Sabeha mufti, assistant Professor, Department of management studies, for guiding me and clarifying the doubts has helped me in doing the internship successfully.

I would also like to extend by thanks of gratitude, BHEL forthere assistance that they offered me when doing the internship, also guided me, helped me by providing the necessary data and giving me practical experience in it.

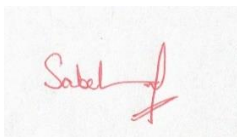
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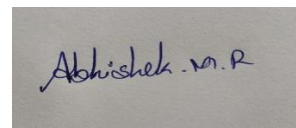
USN: 1CR19MBA03

WEEKLY PROGRESS REPORT

Student name	ABHISHEK M R
USN	1CR19MBA03
Title of the study	An organization study on BHEL
Organization	Bharath Heavy Electrical Ltd
WEEK-1	
Duration (Start date-End date)	6.8.2020 -12.08.2020
Chapter's covered	Chapter-1 and Chapter-2
Descriptions of activities performed during the week	Introduction to organization, industry profile and company profile
WEEK-2	
Duration (start date- End date)	13.8.2020 - 18.8.2020
Chapter's covered	Chapter-3
Descriptions of activities performed during the week	McKensy 7S framework,and Porter's Five ForceModel.
WEEK-3	
Duration (start date – End date)	19.8.2020 - 26.8.2020
Chapter's covered	Chapter 4 and Chapter 5
Descriptions of activities performed during the week	SWOT Analysis and analysis of financial statements
WEEK-4	
Duration (start date - End date)	27.8.2020 - 30.8.2020
Chapter's covered	Chapter-6
Descriptions of activities performed during the week	Learning experience and Bibliography



Signature of guide



Signature of student

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EXECUTIVE SUMMARY

BHARAT HEAVY ELECTRICALS LIMITED (BHEL) happens to be the largest engineering and manufacturing company of its kind in India. The establishment of BHEL in 1964 was the genesis of heavy electrical equipment industry in India. The company is performing very well in this highly competitive era, earning profits consistently and paying dividends uninterruptedly. With its top-notch performance BHEL attained the coveted 'Maharatna' status in 2013. Being the largest manufacturing company operating in energy sector in India and having its presence worldwide, inventory and its management becomes most essential part of the company. Inventory management is considered and recognized as the central process of any manufacturing Unit, this inventory is a matter of concern for all the departments in the company for its smooth operations. In this highly challenging global market the need for cost control and cost-cutting is of paramount. This is why inventory management as a tool for eliminating wastage and controlling inventory cost, is now considered as an integral part of industrial management. Thus, creating the need for the study. The report titled "Inventory Management in BHEL" deals with the problem of inventory control in the company and tries to provide solutions for removing any shortcomings in the inventory management process or methods of the company. Following report is divided into two parts: First part, aims at the understanding of the process and methods of inventory control in the company. Second part, aims at analyzing the efficiency of the inventory control in the company and providing valuable recommendations accordingly.

BHARAT HEAVY ELECTRICAL LIMITED [BHEL]

Bharat Heavy Electricals Limited



<u>Type</u>	<u>Public Sector Undertaking</u>
<u>Traded as</u>	<u>BSE: 500103</u> <u>NSE: BHEL</u>
<u>ISIN</u>	<u>INE257A01026</u> 
Industry	<u>Electrical equipments</u>
Founded	1964; 56 years ago
Founder	<u>Government of India</u>
Headquarters	<u>New Delhi</u> , <u>India</u>
Area served	Worldwide
Key people	Nalin Shinghal (<u>Chairman</u> & <u>Managing Director</u>)

Products	Gas and Steam Turbines Boilers Electric Motors Electric Locomotives Generators Heat Exchangers Switchgears and Sensors Automation and Control Systems Power electronics Transmission systems
Revenue	▼ ₹22,066.64 crore (US\$3.1 billion) (2020) ^[1]
<u>Operating income</u>	▼ ₹-155.16 crore (US\$-22 million) (2020) ^[1]
<u>Net income</u>	▼ ₹-1,472.97 crore (US\$-210 million) (2020) ^[1]
<u>Total assets</u>	▼ ₹60,784.32 crore (US\$8.5 billion) (2020) ^[1]
<u>Total equity</u>	▼ ₹28,651.65 crore (US\$4.0 billion) (2020) ^[1]
Owner	Government of India (63.17%)
Number of employees	39,821(2019) ^[2]
Website	www.bhel.com

CHAPTER: 1

INTRODUCTION:

Bharat Heavy Electricals Limited owned and founded by the Government of India, is an engineering and manufacturing company based in New Delhi, India. Established in 1964, BHEL is India's largest power generation equipment manufacturer.

BHEL is engaged in the design, engineering, manufacturing, construction, testing, commissioning and servicing of a wide range of products, systems and services for the core sectors of the economy, viz. power, transmission, industry, transportation, renewable energy, oil & gas and defence.

It has a network of 17 manufacturing units, 2 repair units, 4 regional offices, 8 service centres, 8 overseas offices, 15 regional centres, 7 joint ventures, and infrastructure allowing it to execute more than 150 projects at sites across India and abroad. The company has established the capability to deliver 20,000 MW p.a. of power equipment to address the growing demand for power generation equipment.

BHEL has retained its market leadership position during 2015-16 with 74% market share in the Power Sector. An improved focus on project execution enabled BHEL record its highest ever commissioning/synchronization of 15059 MW of power plants in domestic and international markets in 2015-16, marking a 59% increase over 2014-15. With the all-time high commissioning of 15000 MW in a single year FY2015-16, BHEL has exceeded 170 GW installed base of power generating equipments.

It also has been exporting its power and industry segment products and services for over 40 years. BHEL's global references are spread across over 76 countries across all the six continents of the world. The cumulative overseas installed capacity of BHEL manufactured power plants exceeds 9,000 MW across 21 countries including Malaysia, Oman, Iraq, UAE, Bhutan, Egypt and New Zealand. Their physical exports range from turnkey projects to after sales services.

CHAPTER: 2

HISTORY:

One of the greatest challenges before the Government of India on attaining freedom in 1947 was to provide a strong base in infrastructure and capital goods for economic and industrial development. The Government under the leadership of Prime Minister, Pandit Jawaharlal Nehru realized that there should be a large manufacturing base and adequate technically qualified personnel for sustained economic growth.



The country's planners recognized that adequate supply of electric power was a precondition for long term industrial growth. This could be sustained only with a strong domestic power equipment industry. Accordingly, the Planning Commission recommended initiating steps towards setting up a factory for the manufacture of all types of heavy electrical equipment required for various projects. As a result, the Government of India signed an agreement on 17th November, 1955, with Associated Electrical Industries (AEI), UK, for the establishment of a factory at Bhopal complete in all respects for the manufacture of heavy electrical equipment in India. The company was registered as Heavy

Electricals (India) Limited (HE(I)L) in the Public Sector under the Ministry of Industry and Commerce on 29th August, 1956.

Substantial increase in demand for power generating capacity was expected in the subsequent Five Year Plans being formulated by the Government of India, with the resolve to push the installed capacity in the country for power generation up to 1,00,000 MW by the turn of the century. Accordingly a decision was taken by the Government to set up three more plants for the manufacture of heavy electrical equipment.

Then...there was BHEL



The first one was at Tiruchirappalli (Tamil Nadu) for high pressure boilers, the second one at Hyderabad (Telangana) for steam turbo generators and high pressure pumps and compressors - both of these with collaboration from Czechoslovakia and the third plant at Haridwar (Uttarakhand) with erstwhile USSR collaboration for large steam turbo generating sets and motors and also hydro generating sets including turbines and generators. These three newly conceived projects were part of Heavy Electricals (India) Limited for which the work was initiated at Bhopal. All the initial preparatory work was carried out from Bhopal till November 1964. Government decided to create a separate corporation for setting-up and managing these three units. Thus Bharat Heavy Electricals Limited was born and formally incorporated on 13th November, 1964.



These three new plants went into production in the latter half of the sixties, focusing on generation equipment, in addition to the Bhopal plant, which had already been manufacturing thermal and hydro generator plants for customer orders from Electricity



boards.

The plants under BHEL also made rapid progress. However, there was considerable overlap as also complementarities in the product profile and technologies of the two corporations. There was urgent need for rationalization of product profile, standardization of designs and engineering practices. Integration of the corporations would result in synergy and optimal use of resources. The merged entity would also be better able to stand growing global competition. After due deliberations, Government of India in 1972, decided to merge the operations of the two

corporations and create a truly modern global enterprise. Accordingly, HE(I)L and BHEL formally merged in January 1974.

ORGANISATIONAL STUDY

MISSION

Providing sustainable business solutions in the fields of Energy, Industry and Infrastructure

VISION

A global engineering enterprise providing solutions for better tomorrow

QUALITY POLICY

In line with its vision to “Become a global engineering enterprise providing solutions for a better tomorrow”, BHEL is committed to deliver best-in-class products and services by: Consistently meeting applicable requirements Developing and empowering people for continual improvement Building a companywide culture of ‘Quality First’ resulting in customer delight.

WORKFLOW OVERVIEW

Economic & Business Overview

World economy has seen significant changes in the past two years. After registering strong growth in 2017 and early 2018, global economic activity started slowing from second half of 2018 onwards. All major indicators of economic activity like industrial production, global trade and Purchasing Managers Index showed a declining trend. Geopolitical issues, trade tensions between the US and China and other economies, coupled with economic sanctions on some oil exporting countries made a serious impact on many economies.

The pace of economic activity in India also slowed in the second half of FY 2018-19. The country grew at 6.8% in FY 2018-19, with the second half growth dropping to 6.2% as compared to 7.5% of the first half. Macro fundamentals of domestic economy remain strong. During FY 2018-19, infrastructure space (power, telecommunications, roads and others) has

witnessed significant and continuous rise in credit deployment by financial institutions which has resulted in capital formation (GfCF) to GDP ratio of 32%, the highest in last five years.

In the domestic power sector, momentum for renewable power addition towards the target of 175 GW by 2022 witnessed a slowdown compared to the previous two years. Renewable market, particularly solar PV based, is maturing as policies continue to be put in place to bring competitiveness and confidence amongst domestic players. Nuclear power plant business has begun to witness growth momentum. Emission control business for thermal plants and replacement of old thermal power plants are also seeing traction.

The national transporter, Indian Railways, has taken several initiatives to decarbonize operations, upgrade & modernize infrastructure, and enhance quality of service.

In the e-mobility space, industry is gearing up to change the way citizens commute and travel. In line with the National Electric Mobility Mission and thrust on e-mobility, rapid growth in both private vehicle and public transport segment is expected along with associated electric infrastructure like charging stations etc. Policy schemes like Fame-II have already been announced by the Government for demand side incentivisation.

The growing infrastructure will need raw materials like steel in large quantities. Keeping this in view, National Steel Policy (2017) envisages creation of 300 million tonnes (MT) of steel manufacturing capacity in the country by 2030-31 against 130 MT in 2017. This has led many capital goods manufacturers to sign MoUs with leading Indian steel companies to reduce countrys dependence on imports for setting up steel projects while creating a larger base for manufacture of capital goods in the domestic market.

In the global arena, big players in the capital goods manufacturing sector are undergoing major changes. To bring focus and strengthen their core business, companies have gone for de-conglomeration as well as strategic acquisitions, leading to realignment of their portfolios. Capital goods markets may well witness oligopolistic plays dominating the business scenario in future with such developments

Preparing for Growth

BHEL embarked on the journey of "Creating BHEL of tomorrow" in the backdrop of an uncertain business environment, which presented opportunities amidst challenges. We have focused our efforts in this direction through our seminal strategy framework: Survive, Revive and Thrive and its respective enabling nine elements (NEEV). We have already taken important steps in this journey and are resolute to take many more, with focus on building and maintaining profitable growth, asserting leadership in the core business, and diversifying by harnessing emerging opportunities.

Persistent efforts towards expeditious execution of existing orders, strategic consolidation of company assets & business groups, and simplification of processes & policies enabled us to continue with the momentum of improved performance. We have continuously recorded growth in turnover for the last three financial years including 2018-19, and have registered quantum growth in profitability. As part of our efforts to make BHEL lean and agile, various initiatives have been taken including consolidation of three units (CSU, FP & IP) as Fabrication, Stamping & Insulator Plant (FSIP) at Jagdishpur, conversion of EMRP into a service centre for Indian Railways at Mumbai, and closure of RMSG at Bhopal.

In the face of continued disruptions in the core business, the company is determined to protect and assert its leadership. Though ordering in the thermal segment has been subdued in the recent years, BHEL has secured 100% of the main plant package orders in the thermal segment for the past two years. The company is strengthening its leadership in emission control equipment business with an existing portfolio of 32 flue gas desulphurisation sets and 11 selective catalytic reduction sets in India and is continuing to grow further, having a significant number of opportunities where it is favourably placed. Resolute focus is being put on maximizing orders from replacement opportunities, enhancing business from primary side capabilities for nuclear cycle, lift irrigation systems, and expanding spares & services business. Simultaneous efforts are on to increase value propositions in power plant business by leveraging digitalization as a driver of new growth opportunities.

Continuing to make a mark beyond the national borders, the company is actively pursuing opportunities in the neighbouring countries and in the African market. In 2018-19, BHEL received the order for Arun-3 Hydroelectric Project which, once commissioned, would be the largest hydro power plant in Nepal, and is on course to execute its first overseas solar project in Chad.

The company is aggressively pursuing its target of increasing the share of non-coal business. Diversification initiatives in various areas such as e-mobility, solar, defence & aerospace, transportation, electricity storage solutions, water etc. have begun to bear results. The company

booked the highest ever orders in transportation, solar, and spares and services businesses in 2018-19.

Significant developments in the transportation business during the year include the supply of first in-house manufactured 6000 HP WAG-9H electric locomotives to Indian Railways, and successful in-house development of regenerative braking system for 5000 HP WAG-7 electric locomotives for the first time in the country. In solar business, the Company received its largest single EPC order for 129 MW SPV plants in Telangana from Singareni Collieries Company Limited. Successful execution of the Telibandha lake purification project at Raipur, has opened avenues for entry into lake/water body purification and rejuvenation projects.

New growth areas are being identified further for converting emerging opportunities into potential success stories. BHEL is making forays in many new areas, such as PV plants with battery energy storage, solar floating PV plants, railway electrification, electric vehicle chargers, and municipal water segment, among others. In order to enhance opportunities from developer mode model in solar business, BHEL has already signed an MoU with GAIL, which will enable BHEL to leverage its manufacturing & EPC strengths, with GAIL playing the role of project developer. As a first of its kind project in the world, BHEL is also setting up a 1.7 MW pilot solar power plant for Indian Railways for directly feeding power to the traction system. A rail based logistics terminal is being set up at Haridwar, which will subsequently be developed into a multi-modal logistic facility by adding value-added services like custom clearance facilities and warehousing.

For laying the foundation of new avenues of business growth for the future, focus on R&D and innovation will be one of the major enablers. Significant progress has been made in major in-house technology development projects underway such as Advanced Ultra Supercritical Technology, Coal to Methanol, propulsion technology for locomotives and electric vehicles etc. Simultaneously, the company is strengthening its technology base through technology collaborations with global industry leaders. Six new technology collaborations have been signed in various areas during the last two years.

Success of our initiatives depends on our people- our most important asset. The company continues to put resolute focus on policy and structural changes for giving impetus to employee development. Reskilling and redeployment of people in new growth areas is being continuously pursued. Many progressive initiatives have already been implemented and similar efforts are being continued. A lot has been achieved so far in our journey of "Creating BHEL of tomorrow" and there is a lot yet to be achieved. The results of our persistent efforts and initiatives give us the confidence that though the journey ahead continues to be challenging, but, we will build a new BHEL, and a new India.

Profile and Performance of Business Segments

Power Sector Overview

The Indian economy has successfully faced multiple challenges and has emerged as one of the fastest growing major economies over the last few years. The success story of the nation has been driven by infrastructure development, demographic expansion, digitalization and urbanization and has been aided by a proactive policy framework and government initiatives.

As a result, the Indian economy is slated to maintain its status as one of the fastest growing major economies in the world in the foreseeable future as well. However, there's still a long journey to traverse for the nation, navigating through a difficult geopolitical environment and overcoming various challenges, on its road to sustainable development.

The high growth trajectory of a nation's economy is strongly correlated with the growth in its energy sector. Availability of reliable and quality energy for all at affordable rates becomes vital for sustained economic growth. India currently possesses an installed capacity base of over 356 GW and has an annual electricity generation of over 1,372 Billion Units (as on 31st March 2019). The nation witnessed a capacity addition of approx. 6 GW from conventional sources in FY 2018-19, most of which was from thermal power plants.

The electricity generation in the nation has grown at a rate of around 5-6% over the past few years, and in 2018-19, there has been almost nil deficit. In the coming years too, the demand is expected to grow significantly, and become almost 1.5 times of the current levels. This is expected to create a significant opportunity for power projects in the coming years.

Current Business Environment

Government initiatives like Make in India, Smart Cities, 24x7 Power for All, etc. are expected to enhance the demand for power in the country in the coming years. The thrust on electrification of railways and development of e-mobility solutions is expected to further boost the demand for power.

With a positive outlook towards infrastructure development and growth in manufacturing industry, the demand for power is expected to improve in the near to medium term, making capacity addition in power systems imperative. The 19th Electric Power Survey and the National Electricity Plan of CEA envisage a demand for power of ~2,050 BU by 2027, which underlines the need for substantial augmentation of power generation, transmission and distribution capabilities from the current levels.

Government of India aims to make thermal electricity generation more environment-friendly. Accordingly, the revised emission norms for existing and upcoming thermal power plants were notified in December 2015, which necessitated installation of emission control equipment in thermal power plants. Ordering for emission control equipment by various utilities has gained further steam in 2019-20, and many tenders are in pipeline, both for central and state sector projects, for retrofitting of emission control equipment in existing power plants. Recent thermal power plant tenders have included emission control equipment as part of scope along with main plant equipment, a trend which is expected to continue in upcoming projects. Also, significant opportunities are expected to arise in Renovation & Modernization (R&M) business, when these new environmental norms get enforced for existing plants. In addition, the Government is also encouraging replacement of old and inefficient subcritical plants with new, more efficient, supercritical plants.

Over the past few years, developers have faced constraints in obtaining assured fuel supply, timely clearances and issues related to land acquisition, funding, and securing power off-take agreements with DISCOMs. Few significant reforms undertaken by the government such as the UDAY scheme, facilitating medium term power procurement from commissioned capacities which are lacking a Power Purchase Agreement (PPA), etc. are expected to result in further improvements in the power sector business scenario. Some aspects of the stress faced by coal-based power projects in India have eased significantly with an improvement in coal availability and power demand, but delayed payments by distribution companies, gas supply constraints, stressed assets in the sector, etc. continue to pose challenges to power producers. Resultantly, even though the sectoral outlook has improved in the recent years, the ordering has been mainly in central and state government sectors, with the private sector still grappling with existing capacity issues.

Policy shift towards Renewable Energy Sources (RES) based power, marked by the governments ambitious target of 175 GW RES based installed capacity by 2022, saw RES based capacity addition outpacing capacity addition from conventional sources of power. However, the RES power segment has witnessed a slowdown in growth rate in 2018-19, due to factors like price escalation for solar modules, safeguard duty on solar PV imports, issues in land acquisition, re-negotiation and cancellation of Power Purchase Agreements (PPAs) between RES developers and discoms, etc. Capacity addition of RES based power generating

systems also calls for significant enhancement of hydro-electric power capacity, especially of pumped storage, and gas based power plants, to meet the grid balancing and stabilization requirements necessitated by the inherent variability of RES based power systems. Coal based power plants are expected to remain the mainstay of Indias power generating capacity in the coming years, in view of their suitability for continuous, round-the-year operation and significant improvements in efficiency and emission levels through technology advancements enabling coal based power plants to generate cleaner and greener power.

Only about one-third of Indias hydropower potential of 149 GW has so far been harnessed. Hydropower generation from conventional and pump storage generating stations can play a significant role in the balancing of generation, which will be a major challenge with the increased share of renewable power generation. This is likely to result in a major thrust to hydro projects. Further, 30% of Indias hydropower plants have completed 35 years, thus necessitating requirement of life extension and performance & efficiency upgrades.

Nuclear power, an integral part of Govt. of Indias strategy for clean and green energy, is poised for a quantum leap in the coming years. In addition to 2x700 MWe GHAVP 1&2 (Gorakhpur Haryana Anu Vidyut Pariyojna), procurement activities for 10x700 MWe PHWRs have also started on Fleet Mode basis.

Offerings

BHEL is one of the few companies in the world manufacturing the entire range of power plant equipment, with proven capabilities for executing thermal, gas, hydro and nuclear power projects.

BHEL has the capability for concept to commissioning of thermal power plants encompassing steam turbines, generators, boilers and matching auxiliaries up to 1000 MW ratings. The Company is executing numerous prestigious projects with supercritical thermal sets of 660/700/800 MW ratings on EPC basis.

BHEL also supplies and executes Circulating Fluidized Bed Combustion (CFBC) boilers for thermal plants, suitable for wide range of low-calorific fuels like pet-coke, lignite, etc. BHEL offers gas turbines and matching generators upto 299 MW (ISO) rating, tailored to meet specific needs, for both open and combined cycle operation.

In nuclear power sector, BHEL is amongst the few organisations which are associated in all the three stages of indigenous nuclear power programme of the country both on primary and secondary Side. BHEL supplied 220/235/500/540 MWe Nuclear Turbine Generator sets are already under operation and currently, BHEL is also executing 700 MWe sets.

BHEL has the capability for engineering and manufacturing custom-made conventional hydro turbines of Kaplan, Francis and Pelton types with matching generators upto 400 MW, bulb turbine with matching generators up to 10 MW, pump turbines with matching motor-generators up to 250 MW, high capacity pumps along with matching motors up to 150 MW for Lift Irrigation Schemes and small hydro power plants of 10-25 MW capacity.

In respect of business opportunities arising from the revised emission norms, BHEL offers customized equipment for controlling emissions from thermal power plants. BHEL is also ready to provide retrofit solutions of ESP, FGD, NOx control equipment and furnace modification solutions. BHEL has supplied Electro-Static Precipitators for control of particulate matter not only for BHEL boilers, but also for boilers of other manufacturers.

The company has proven expertise in plant performance improvement through renovation, modernization and uprating of a variety of power plant equipment, besides specialized know-how of residual life assessment, health diagnostics and life extension of plants. Retrofit packages for ESP and C&I with state of the art technologies are also being offered by BHEL.

PRODUCTS

Gas and Steam Turbines

Boilers

Electric Motors

Electric Locomotives

Generators

Heat Exchangers

Switchgears and Sensors

Automation and Control Systems

Power electronics

Transmission system

Shareholders pattern

Holder's Name	No of shares		% Shares Holding
NoOfShares	3482063355		100%
Promoters	2199650402		3.17%
Foreigninstitutions	177292482		5.09%
NBanksMutualFunds	204321640		5.87%
Others	91595884		2.63%
GeneralPublic	382066460		10.97%
FinancialInstitutions	427136487		12.27%

Awards:

- Bharat Heavy Electricals Limited (BHEL) has been ranked the Ninth Most Innovative Company in the world by the renowned US business magazine Forbes in 2011
- BHEL wins ICWAI National Awards for Excellence in Cost Management for the sixth consecutive year; maximum number of awards conferred on BHEL among public and private sector companies.
- BHEL's Innovativeness gets Global Recognition; Forbes ranks BHEL at No.9 in the list of the World's 100 Most Innovative Companies.
- BHEL gets Golden Peacock Award 2011 for Occupational Health and Safety.
- 2010– BHEL bags EEPC's Top Export Award for the 20th consecutive year..
- BHEL wins MoU Excellence Award for the year 2006–07 for the highest growth rate in Market Capitalization.

Other achievements, BHEL has:

- Installed equipment for over 90,000 MW of power generation — for Utilities, Captive and Industrial users.
- Supplied over 2,25,000 MVA transformer capacity and other equipment operating in Transmission & Distribution network up to 400 kV (AC & DC).
- Supplied over 25,000 Motors with Drive Control System to Power projects, Petrochemicals, Refineries, Steel, Aluminum, Fertilizer, Cement plants, etc.
- Supplied Traction electrics and AC/DC locos to power over 12,000 kms Railway network.
- Supplied over one million Valves to Power Plants and other Industries.

Achievements/ recognition:–

- Certified to ISO 9001:2000
- Rajiv Gandhi Quality Award: 1995
- Golden Peacock – National Quality Award: 1999
- Golden Peacock – National Quality Award: 1999–2000
- CII–EXIM 'Strong Commitment to Total Quality Management'– 2000
- Rajiv Gandhi Quality Award: 2000–01
- IMC–Bajaj National Quality “Commendation Certificate” – 2002
- Special Commendation under Golden Peacock – National Quality Award – 2003
- International Asia Pacific Quality Award (IAPQA) – 2005

2011

- BHEL employees win 8 Prime Minister's Shram Awards
- BHEL employees win 5 Vishwakarma National Awards
- BHEL Unit bags 3 National Safety Awards

2012

- BHEL–developed India's first Ultra High Voltage AC 1200 kV Transformer successfully commissioned
- BHEL wins SCOPE Meritorious Award 2010–11 for Best Practices in Human Resource Management
-
- The Hon'ble President of India, Shri Pranab Mukherjee, presenting the National Energy Conservation Award 2012 to Mr. B. Prasada Rao, CMD, BHEL

2013

- BHEL conferred Jury Award for Lasting Impact on Indian Economy
- CMD, BHEL honoured with Lakshya Business Visionary Award 2013
- BHEL bags PSE Excellence Award 2013 for R&D, Technology Development and Innovation
- BHEL wins India Pride Award 2013 for Excellence in Heavy Industries

2014

- BHEL bags World Intellectual Property Organisation (WIPO) Award for Innovative Enterprises
- BHEL achieves milestone in the Middle East market with the commissioning of another Gas Turbine– based Power Plant in Oman
- BHEL bags Intellectual Property Award 2014

2015

- BHEL has been awarded the CBIP award for “Best Power Equipment Manufacturing Organization”.
- BHEL bags “Outstanding Achievement Award” in recognition of excellence in R&D through technology in large enterprise category

BHEL: Promising prospects

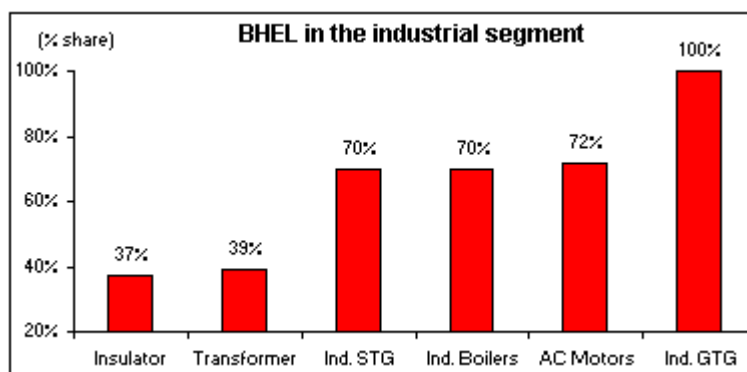
The stock price of [BHEL](#) has been consistently on the rise since last 8 months. After having gained 74%, the question in one's mind is whether the rally is for real. We have analysed BHEL's business profile and future growth prospects. BHEL's operations are organised around three business sectors, namely [power](#), other industries (includes transmission, transportation, [telecommunication](#) and renewable energy) and international operations. In FY03, contribution to revenues from the power and industrial segment was 67% and 33% respectively (in FY02, the same stood at 69% and 31%).

Coming to the core strengths of the company, BHEL is India's largest engineering company and the leading supplier for power generation equipments in India. Till date, BHEL has supplied 65% of total power generation capacity in India i.e. around 69,092 MW and 79% of thermal power generation of the country till date. It is also well placed in industrial operations like manufacturing equipments for transmission, transportation, telecommunication and renewable energy and has a market share of more than 60%. The company's international operations have been growing at an impressive rate. It received single largest export order of Rs 11.3 bn, the highest value overseas order for any capital goods manufacturing company in India. Exports actually declined in FY03 due to delay in contracts in the light of war situation. However, this was an aberration. BHEL has supplied steam generators to Malaysia in the past (accounts for about 40% of the thermal capacity in Malaysia till date).

The investment climate is likely to improve in the power sector with the passing of the Electricity Bill recently. This not only paves the way for opening up of the transmission and distribution aspect of the power sector, but also for restructuring of State Electricity Board (SEBs). Going forward, investments in power generation are likely to improve considering the ever-widening gap between demand and supply. Consequently, BHEL as a major player in setting up of power plants is likely to benefit.

To put things in perspective, [NTPC](#) is planning to add another 20,000 MW in the next decade. Historically, BHEL has bagged 85% of contracts from NTPC and the trend is expected to continue. This is not only because both are [public sector undertakings](#) but also because none other than BHEL has experience and ability to make coal boilers. It costs around Rs 25 m to set up 1 MW capacity. Assuming that only 50% of the contract is won by BHEL, revenues from NTPC alone will be Rs 250 bn by 2012 (turnover of BHEL in FY03 was Rs 69.8 bn). Recently BHEL has joined hands with NTPC for undertaking maintenance jobs of power plants as well, which will increase services income in the future.

BHEL was able to bag the highest-ever order of Rs 112 bn in a single year, despite intense competition from national and global players. BHEL's order book stood at Rs 158 bn as of March 2003 (2.3x FY03 turnover). BHEL also has strong presence in the industrial market segment. The graph below highlights the market share in various industrial segments.



BHEL is taking strong steps to improve overall efficiency and productivity. The company's VRS has so far seen BHEL prune its workforce by 25% to 47,000 in the last four years. The value-add per employee has gone up significantly to Rs 0.7 m in FY03. It has also helped company to improve its bottom line significantly. We expect the trend to continue in the medium-term.

CHAPTER 3

McKensy's 7S framework

To critically analyze BHEL from the McKinsey 7S lenses, it is important to identify its vision. BHEL's vision is "to become a world-class engineering enterprise, committed to enhancing stakeholder value". Thus, from the vision we are clearly able to identify two distinct traits that BHEL wants to demonstrate during its lifetime

- (a) Become a world class engineering enterprise
- (b) Enhance stakeholder value.

A close look at each of these traits identifies the fact that, while becoming a world class engineering enterprise is an outside-in focus where BHEL would require to benchmark its internal processes, production systems, design principles, quality systems etc. with the other leaders in its industry and hence keep improving on it continuously. The fact that BHEL wants to enhance its stakeholder's value involves an inside-out focus, where BHEL needs to determine how it will be able to generate enough value for its investors such that BHEL remains the destination of choice for investment. To be able to do this, BHEL would have to continuously set benchmarks and out-perform itself to be able to keep investors interested.

Now to look at how BHEL has been able to achieve/work towards its dual element vision, we will utilize McKinsey's 7S framework and try to identify which of the 'S's have been worked upon by BHEL and in what ways:

Skills

- BHEL has historically invested in its talent pool and have been able to attract the brightest and best. With a base of 42000+ skilled and committed employees, BHEL has went on to become the largest engineering and manufacturing enterprise in India operating from over 40 years and manufacturing over 180 products across 30 major product groups.
- Following are the major areas of skill focus by BHEL: Thermal Power, Gas based Power, Hydro Power, DG Power, Industrial turbo sets, Boilers & Boiler Auxiliaries, Heat exchangers & Pressure vessels, Pumps, Power station control equipments, Oil field equipments, Transformers & Switch gears, Wind mills, Industrial electrical machines, Non-conventional energy systems, Casting & Forgings, Transportation equipment and Power devices.
- BHEL is a market leader in Power generation and Industrial electrical machines internationally.

Staff

- BHEL believes in investing in its employees and thus have created a culture of continuous learning which enables them to be at the cutting edge of technology changes. BHEL is able to pursue this by:
 - o Continuous training and retraining
 - o Career planning for its employees

- o Positive work culture and participative style of management

All these have engendered development of a committed and motivated workforce setting new benchmarks in terms of productivity, quality and responsiveness.

- BHEL has joined the Global Compact of United Nations which includes the following principles
 - o Human Rights
 - ♣ Business should support and respect the protection of internationally proclaimed human rights
 - ♣ Make sure that they are not complicit in human rights abuses
 - o Labour Standards
 - ♣ Business should uphold the freedom of association and the effective recognition of the right to collective bargaining
 - ♣ The elimination of all forms of forced and compulsory labour
 - ♣ The effective abolition of child labour
 - ♣ The elimination of discrimination in respect of employment and occupation

Shared Values

- As stated in its vision, BHEL has a strong focus on generating value for its stakeholders. This can be adjudged by the fact that the company has been earning profits continuously since 1971-72 and paying dividends since 1976-77.
- BHEL has a strong commitment towards environment and pollution control. Hence it has set up PCRI which is the in-house R&D unit of BHEL. The institute has undertaken a number of R&D projects to develop industrial pollution control technologies, such as:
 - o Development of prediction modes for forecasting air pollution
 - o Development of Acoustic barriers to control noise pollution in Fabrication shops
 - o Development of technology for disinfection of treated sewage using ultra violet radiation techniques
- BHEL supports anti-corruption practices and demonstrates it by participating in Global Compact of United Nations which includes Anti-corruption principles.

Systems

- *Quality Management:*
 - o BHEL uses Quality Management Systems, which are certified to ISO 9001:2000 series of Standards by Internationally acclaimed certifying agency, BVQI to meet its Quality policy.
 - o Corporate Quality and Unit level Quality structure enables requisite planning, control and implementation of Company-wide Quality Policy and Objectives which are linked to the Company's Vision statement
 - o Corporate Quality derives strength from direct reporting to Chairman and Managing Director of the Company.
 - o BHEL utilizes and propagates Quality Management Systems and Total Quality Management

- o As part of its quality initiative BHEL formulates, implements and monitors improvements plans with focus on internal and external Customer Satisfaction. It performs investigations and preventive actions on Critical Quality Issues.
- o Calibration and testing laboratories of BHEL are accredited under the National Accreditation Board for Calibration and Testing Laboratories (NABL) scheme of Laboratory Accreditation, which has got mutual recognition with Asia Pacific Laboratory Accreditation Conference and International Laboratory Accreditation Conference.
- o BHEL has achieved product certification from international bodies like ASME, API etc. and Plant Approvals by agencies like Lloyds Register of Shipping, U.K., Chief Controller of Explosives India, TUV Germany etc.
- o BHEL has adopted European Foundation for Quality Management (EFQM) model for Business Excellence. Through this model and annual self-assessment exercise, BHEL is institutionalising continuous improvement in all its operations.
- *Vendor Management*
 - o Vendor awareness is driven through online systems which makes the vendor bill payment processes transparent.
 - o Vendor on-boarding is being made easy by making vendor registration & information systems available online.

Strategy

- o BHEL has participated in strategic alliances and JVs which has allowed them to expand their product offerings and improve technology capability by undertaking joint R&D projects with its partners. Some of the key alliances/JVs are as follows:
 - o BHEL and GE India Industrial Private Limited (GEIPL), a 100% owned subsidiary of GE, USA, have joined hands for cooperation on Water Treatment Equipment. As per the agreement, BHEL and GEIPL will jointly engineer and supply water treatment solutions for the Indian market. Over the term of the agreement, through joint working, BHEL will acquire the capability to address large water treatment systems based on GE Products, on its own.
 - o BHEL and Govt. of Kerala form JV for manufacture of products for Railways and Industries. Strategic move to enhance BHEL's presence in the Transportation, Industrial and Renewable Energy Sectors.
 - o BHEL and Toshiba Corporation sign MoU to form JV Company for Transmission and Distribution business in India and other mutually agreed countries.
 - o BHEL and MPPGCL float JV Company for setting up Supercritical Thermal Power Project in Madhya Pradesh.
 - o BHEL and KEL to form JV for manufacture of products for Railways and Industries; Strategic move to enhance BHEL's presence in the Transportation, Industrial and Renewable Energy Sectors
 - o BHEL and TNEB float JV Company for setting up the first 2x800 MW Supercritical Power Project in Tamil Nadu.
 - o BHEL, NTPC JV Company Incorporated, To jointly execute EPC Contracts and Manufacture and Supply Equipment in India and Abroad

o BHEL makes its foray in execution of Supercritical Thermal Power Projects; Signs MoU with TNEB to float JV Company for setting up the first 2x800 MW Supercritical Power Project in Tamil Nadu.

o R&D and technology development are of strategic importance to the company as it operates in a competitive environment where technology is a key driver. Technology development efforts undertaken by BHEL have led to the filing of patents and copyrights at the rate of nearly one a day, significantly enhancing the company's intellectual capital to almost 1,300 patents and copyrights filed, which are in productive use in the company's business.

With an R&D spend at nearly 2.5% of its sales turnover; BHEL is the highest spender on R&D in India for its kind of industry. Significantly, BHEL is one of the only four Indian companies and the only Indian Public Sector Enterprise figuring in 'The Global Innovation 1000' of Booz & Co., a list of 1000 publicly-traded companies which are the biggest spenders on R&D in the world.

o BHEL plans to invest and build competency in emerging markets which includes Alternative energy, transformer manufacturing (increased to 45,000 MVA), investment of Rs. 250 crores in CE (areas identified are Photovoltaic, Sub-assembly, Defense products & Semiconductors. New product investments in PADO hydro & gas, 800mw sets, railway signaling, space grade solar cells, ships control system and integrated platform management system

PORTER'S FIVE FORCE MODEL



Bhel Porter five forces reflects the competitive environment of an industry. It is a strategic tool that is used to avoid or minimize the risk of losing the competitive edge that the organization has and to ensure the profitability of the products in the long run. The company holds its vision closely as it allows them to orientate its innovation in terms of choices regarding the investment and strategies. Within the industry the businesses profitability is dependent upon the following forces:

- Competitive rivalry
- Threats of new entrants
- Threats of substitute
- Bargaining power of suppliers
- Bargaining power of customers
-

Structure of porter's five forces analysis

Bhel Competitive rivalry

The competition among the firms help in identifying the lucrativeness of an industry where companies are competing hard in order to maintain their power within the industry. The Bhel competition is moreover on basis of diversity, the development within the sector and the barriers related to entrance in the market. The competitive rivalry is the analysis of the brands and the product, its strengths and weakness along with the strategies, competitors and the share in the market.

Threat of new Bhel entrants

It is in the favor of the companies that exist in the market to create barriers for the new entrants to prevent them from entering into the industry. The organizations could be the new companies or the companies that are planning to diversify itself in the market. The barriers can be both industrial and legal. Apart from this the size and the reputation of the companies that are already operating in the market also play an important. Furthermore the cost related to the entry, access to raw materials, barriers related to culture and technical standards also play a major role and can affect the decision of the new entrants in the market.

Threat of substitute products

The Bhel substitute products are an alternatives that are available in the market at comparatively better prices. Such products prevail due to the technological and innovative advancement. Due to which the products being produced by the companies that are already existing in the market and is using the same technology are than replaced by the other company's products that are comparatively better in terms of price and quality and are being produced from sectors with significant profits. The substitute products are dangerous as the companies are under constant threat of being replaced.

High threat of substitute leads to low profitability as it limits the industry profits by placing a price ceiling due to the fear of being substituted by other product. Apart from this it also affect the growth potentials of the industry as a whole but reducing the profitability margins.

Bargaining power of suppliers Bhel

Powerful suppliers possess more power to capture significant value for themselves by demanding high prices while limiting the quality and the quantity of the product or services or

by transferring the cost on the participant of the industry. Many condition imposed by the suppliers generally include the increase in price while compromising the quality and quantity.

A bargaining power of a supplier in the market is strong if:

- It is more concentrated than the industry it is selling to.
- It is not heavily relying on the industry for its profits
- If the participants in the industry have to incur high cost for switching suppliers or the firms are located adjacent to the suppliers manufacturing facilities.
- The product being offered by the suppliers are highly differentiated.
- And when there is no close substitute available for the products being supplied by the suppliers.
-

Bhel Bargaining power of customers

The buyers having strong bargaining power can highly influence the profitability of the suppliers operating in the market by imposing condition that are not much favorable for the suppliers in terms of price, quality or service. Therefore choosing clients often become crucial for the organizations as to avoid the situation of being highly depended on the buyers. The level of interest and concentration of buyers toward the product gives them more or less power.

Powerful buyers could flip the side of the powerful supplies by forcing the prices to move downwards and by demanding high quality and services by creating a competition between the participants in the industry on the basis of price and quantity. Bhel Customer are deemed strong if they contain negotiating leverage specifically if the industry is sensitive to price, the buyers can pressure suppliers for further price reductions.

The customer are assumed to have strong buying power in case:

- If the number of buyer are limited or each of the buyer purchases large quantity relative to the size of the suppliers.
- The products in the industry are standardized or are undifferentiated.
- The cost of switching is comparatively low.

Limitations of Bhel Porter's five forces

Though the model from a strategic point of view is an important tool but there are certain limitation associated with the application of the porter five forces model. The framework use a classic perfect market and relatively a static structure of market i.e. it only incorporates the aspects of the present day and only incorporate the events that took place within the short term period. Bhel Apart from the model only provide the overview of the environment and does not define the industry clearly. As it can be difficult to group the companies having similar business lines and to call it an industry. Therefore Porter framework due to its limitation is too inert to be depending upon outside the short term to medium, term objectives. It emphasizes more on external factors and ignore the specific factors that are more specially related with the firm. The model doesn't incorporate new business model and the changing dynamics of the market and the impact of globalization. Moreover it does not consider non-market forces.

Chapter 4

SWOT ANALYSIS



Bharat Heavy Electricals Limited (BHEL) is an electrical equipment industry that was formed during the year 1964 and is headquartered in New Delhi, India. It is owned and formed by the Government of India.

It is the largest power generation equipment manufacturer that manufactures various products like Gas and Steam Turbines, Boilers, Electric Motors, Electric Locomotives, Generators, Heat Exchangers, Switchgears and Sensors, Automation and Control Systems, Power Electronics, and Transmission Systems.

During the year 1991, BHEL was converted into a public limited company. Over a period of years, it has developed the capacity to produce much equipment for all sectors.

BHEL is engaged in various operations like design, engineering, construction, testing, and servicing of many products. BHEL has a huge network of about 17 manufacturing units, two maintenance units, eight service centers, four regional offices.

It also has eight overseas offices and seven joint ventures. BHEL has established the competence to deliver about 20,000 MW p.a of power equipment to meet the rising demand for power generation equipment.

BHEL has been transferring its power and industry segment products and services for about 40 years. Its global visibility has been spread across 76 countries in about six continents.

Ever since its formation, BHEL has made its Quality foundation strong. During the year 1970-90, BHEL has implemented Quality Manual for the entire organization that includes systems, tasks, procedures, and processes.

Second tier documents like standard technological procedures, test plans, process sheets, non-conformance handling systems, and procedures were implemented during this time. Since that time, BHEL is leading in Calibration System, Quality Planning, and Quality Circles impression in India.

Strengths in the SWOT Analysis of BHEL



- **Strong Base in Engineering** – BHEL has a strong base in engineering and a stable industrial relationship. It is the largest power generation equipment manufacturer that manufactures various products like Gas and Steam Turbines, Boilers, Electric Motors, Electric Locomotives, Generators, Heat Exchangers, Switchgears and Sensors, Automation and Control Systems, Power Electronics, and Transmission Systems.
- **Continuous Profits** – BHEL has been generating continuous profits and paying dividends since the year 1974. This is a great strength to the company.
- **Support from Collaborators** – BHEL has great support from the collaborators that have helped them to obtain many modern [technologies](#) and then transform it to suit the Indian conditions.
- **Huge Customer Base** – BHEL has a huge customer base in the domestic business that leads to being popular and having a greater influence in the [market](#).
- **Huge Products** – BHEL produces almost 190 products and more than 30 major [product](#) groups.
- **Quality Products** – The Quality foundation of BHEL is quite strong. During the year 1970-90, BHEL has implemented Quality Manual for the entire organization that includes systems, tasks, procedures, and processes. Second tier documents like standard technological procedures, test plans, process sheets, non-conformance handling systems, and procedures were implemented during this time. Since that time, BHEL is leading in Calibration System, Quality Planning, and Quality Circles impression in India.
- **Research & Development** – BHEL has always faced a strong emphasis on [innovation](#) and creative advancement. It has led to the develop many technologically competitive products and services. Their labs at the Research & Development wing have Permanent Magnet Machines, Insulation, and Chemical Sciences, Intelligent Machine Control, Electrical Machines, Power Electronic Systems, High Voltage Engineering, GIP, and Switchgear Development, and many more.

Weaknesses in the SWOT Analysis of BHEL

- **The inability for Certain Activities** – There have been few situations have BHEL had the inability to provide supplier's credit, financing of power projects, and soft loans.
- **Longer Delivery Cycles** – BHEL delivers products by taking more time than international competitors. This could be a weakness having longer delivery cycles would have a huge impact on the business.
- **Less Marketing Infrastructure** – BHEL lacks effective marketing infrastructure that is, in fact, a weakness for the company.
- **Procurement Process** – The procurement process in BHEL is cumbersome, and they are subject to auditing.
- **PSU Status** – PSU status is yet another weakness for BHEL as it is subject to the rules and regulations. It is forced to carry a huge amount of labor force that is unable to reduce.
- **Criticism** – The BHEL project, 1340-megawatt coal power plant situated in Rampal that is close to the Sundarban Mangrove Forest for Bangladesh-India Friendship Power Company is a joint venture. This project has faced a lot of criticism for impacting the environment and the likely harm that could cause to the largest mangrove forest in the world.

Opportunities in the SWOT Analysis of BHEL

- **Demand for Power Domain** – There exists a huge demand in the power domain to produce more equipment. This provides a huge opportunity for BHEL.
- **Ageing Power Plants** – As BHEL is into the industry for a long time, there are many plants that are quite old and require services and spare parts. On doing this, BHEL can carry out production faster and attach more visibility in the market.
- **Increased Private Sector Participation** – BHEL sees a healthier work environment and increased private sector participation in the operation of distribution circles as well.
- **Increase in Defense Budget** – An increase in defense budget sees a lot of opportunity for BHEL as it will increase the top line for them.
- **Joint Venture with Siemens** – Power Plant Performance Improvement Ltd, which is a joint venture with Siemens, is a tie-up that will be beneficial and provides a lot of scope for the business.

Threats in the SWOT Analysis of BHEL

- **Competitors** – BHEL faces a lot of competition from both the international and national companies.
- **Associations in the Industry** – Associations in the industry have drastically reduced the company's turn over. This is, in fact, a big threat to the company.
- **Increase in Small Contractors** – Increased in the number of small contractors is a big threat to BHEL that leads to price wars.
- **New Players in the Market** – Emerging new players in the market is also a serious threat to the company.

Chapter 5

FINANCIAL STATEMENT OF BHEL

BALANCE SHEET OF BHARAT HEAVY ELECTRICALS (in Rs. Cr.)	MAR '20	MAR '19	MAR '18	MAR '17	MAR '16
	12 mths	12 mths	12 mths	12 mths	12 mths
SOURCES OF FUNDS					
Total Share Capital	696.41	696.41	734.28	489.52	489.52
Equity Share Capital	696.41	696.41	734.28	489.52	489.52
Reserves	28,484.80	30,703.45	31,866.80	31,804.92	31,691.56
NETWORTH	29,181.21	31,399.86	32,601.08	32,294.44	32,181.08
Secured Loans	5,008.76	2,552.72	0.00	0.00	0.00
Unsecured Loans	0.00	0.00	57.18	89.55	126.29
TOTAL DEBT	5,008.76	2,552.72	57.18	89.55	126.29
TOTAL LIABILITIES	34,189.97	33,952.58	32,658.26	32,383.99	32,307.37
Gross Block	3,128.08	5,829.22	5,495.58	5,279.20	4,848.27

Less: Accum. Depreciation	0.00	2,862.23	2,426.74	1,683.32	885.79
NET BLOCK	3,128.08	2,966.99	3,068.84	3,595.88	3,962.48
Capital Work in Progress	0.00	235.44	202.76	168.34	317.88
INVESTMENTS	669.51	669.36	690.74	661.42	664.16
Inventories	8,905.46	8,113.49	6,258.76	7,372.38	9,602.15
Sundry Debtors	7,107.62	12,009.57	22,771.49	22,075.56	22,430.12
Cash and Bank Balance	6,418.56	7,503.34	11,291.18	10,491.79	10,085.99
Total Current Assets	22,431.64	27,626.40	40,321.43	39,939.73	42,118.26
Loans and Advances	35,042.19	32,917.82	19,505.38	16,864.83	18,100.16
Total CA, Loans & Advances	57,473.83	60,544.22	59,826.81	56,804.56	60,218.42
Current Liabilities	18,751.78	22,523.41	22,425.01	19,653.30	21,895.17
Provisions	8,329.67	7,940.02	8,705.88	9,192.91	10,960.40
Total CL & Provisions	27,081.45	30,463.43	31,130.89	28,846.21	32,855.57
NET CURRENT ASSETS	30,392.38	30,080.79	28,695.92	27,958.35	27,362.85
TOTAL ASSETS	34,189.97	33,952.58	32,658.26	32,383.99	32,307.37

Contingent Liabilities	0.00	7,759.43	5,642.75	7,117.43	14,809.64
Book Value (Rs)	83.80	90.18	88.80	131.94	131.48

Profit and loss account

Parameter	MAR'18 (₹ Cr.)	MAR'17 (₹ Cr.)	Change %
Gross Sales	29,060.98	29,699.82	-2.15%
Less :Inter divisional transfers	0.00	0.00	0.00%
Less: Sales Returns	0.00	0.00	0.00%
Less: Excise	135.27	1,252.78	-89.20%
Net Sales	28,925.71	28,447.04	1.68%
EXPENDITURE:			
Increase/Decrease in Stock	736.13	994.48	-25.98%
Raw Materials Consumed	12,118.35	13,102.81	-7.51%
Power & Fuel Cost	505.12	494.51	2.15%
Employee Cost	6,026.47	5,394.59	11.71%
Other Manufacturing Expenses	4,422.61	4,138.42	6.87%
General and Administration Expenses	814.63	872.45	-6.63%

Selling and Distribution Expenses	430.13	468.23	-8.14%
Miscellaneous Expenses	4,659.31	5,734.01	-18.74%
Expenses Capitalised	0.00	0.00	0.00%
Total Expenditure	29,712.75	31,199.50	-4.77%
PBIDT (Excl OI)	-787.04	-2,752.46	71.41%
Other Income	3,487.99	4,641.28	-24.85%
Operating Profit	2,700.95	1,888.82	43.00%
Interest	329.56	412.15	-20.04%
PBDT	2,371.39	1,476.67	60.59%
Depreciation	786.40	848.84	-7.36%
Profit Before Taxation & Exceptional Items	1,584.99	627.83	152.46%
Exceptional Income / Expenses	0.00	0.00	0.00%
Profit Before Tax	1,584.99	627.83	152.46%
Provision for Tax	778.39	131.97	489.82%
PAT	806.60	495.86	62.67%
Extraordinary Items	0.00	0.00	0.00%
Adj to Profit After Tax	0.00	0.00	0.00%

Profit Balance B/F	-474.60	-616.96	23.07%
Appropriations	332.00	-121.10	374.15%
Equity Dividend (%)	91.00	79.00	15.19%
Earnings Per Share (in ₹)	2.20	2.03	8.44%
Book Value (in ₹)	88.80	131.94	-32.70%

Cash flow statement of bhel

Parameter	MAR'18 (₹ Cr.)	MAR'17 (₹ Cr.)	Change %
Net Profit Before Taxes	1,584.99	627.83	152.46%
Adjustments for Expenses & Provisions	2,636.20	1,899.43	38.79%
Adjustments for Liabilities & Assets	- 3,270.25	- 1,376.37	- 137.60%
Cash Flow from operating activities	994.08	561.97	76.89%
Cash Flow from investing activities	960.74	-565.94	269.76%
Cash Flow from financing activities	-671.03	-469.68	-42.87%
Effect of exchange fluctuation on translation reserve	0.00	0.00	0.00%
Net increase/(decrease) in cash and cash equivalents	1,283.79	-473.65	371.04%

Opening Cash & Cash Equivalents	1,484.89	1,958.54	-24.18%
Cash & Cash Equivalent on Amalgamation / Take over / Merger	0.00	0.00	0.00%
Cash & Cash Equivalent of Subsidiaries under liquidations	0.00	0.00	0.00%
Translation adjustment on reserves / op cash balalces frgn subsidiaries	0.00	0.00	0.00%
Effect of Foreign Exchange Fluctuations	0.00	0.00	0.00%
Closing Cash & Cash Equivalent	2,768.68	1,484.89	86.46%

Ratios of bhel

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Parameter	MAR'18	MAR'17
Operational & Financial Ratios:		
Earnings Per Share (Rs)	2.20	2.03

DPS(Rs)	1.82	1.58
Book NAV/Share(Rs)	88.80	131.94
Margin Ratios:		
Yield on Advances	0.00	0.00
Yield on Investments	0.00	0.00
Cost of Liabilities	0.00	0.00
NIM	0.00	0.00
Interest Spread	0.00	0.00
Performance Ratios:		
ROA(%)	1.31	0.77
ROE(%)	2.49	1.54
ROCE(%)	5.88	3.21
Efficiency Ratios:		
Cost Income Ratio	0.00	0.00
Core Cost Income Ratio	0.00	0.00
Operating Costs to Assets	0.00	0.00
Capitalisation Ratios:		

Tier 1 ratio	0.00	0.00
Tier 2 ratio	0.00	0.00
CAR	0.00	0.00
Valuation Parameters:		
PER(x)	37.05	53.67
PCE(x)	18.76	29.69
Price / Book(x)	0.92	1.24
Yield(%)	2.24	0.97
EV / Net Sales(x)	0.65	1.04
EV / Core EBITDA(x)	6.92	15.66
EV / EBIT(x)	9.76	28.44
EV / CE(x)	0.30	0.49
M Cap / Sales	1.03	1.40
Growth Ratio:		
Core Operating Income Growth	-20.04	14.65
Operating Profit Growth	43.00	1,341.30
Net Profit Growth	62.67	169.88

BVPS Growth	-32.70	0.35
Advances Growth	0.00	0.00
EPS Growth(%)	8.44	169.88
Liquidity Ratios:		
Loans / Deposits(x)	0.00	0.00
Total Debt / Equity(x)	0.00	0.00
Current Ratio(x)	0.00	0.00
Quick Ratio(x)	0.00	0.00
Total Debt / Mcap(x)	0.00	0.00
Net NPA in Rs. Million	0.00	0.00

Chapter-6

Learning experience

I have taken BHEL for my organizational study even though it was a secondary data it was great experience learning more in-depth about the company and acquired quite knowledge about the company

- Learned about the their innovation in products.
- Learned about the awards and rewards received by the company.
- Their marketing strategies in promoting their companies product
- Learned about their strength and weakness in the industry

Bibliography and References

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