VOLVO CONSTRUCTION EQUIPMENT

TO WHOMSOEVER IT MAY CONCERN

Date	Telephone Indialling	Telefax	Our Reference

23rd March, 2018

This is to certify that Miss. Rakshitha S (USN: 1AZ16MBA52) student of Acharya Institute of Technology, Bangalore pursuing Final year of M.B.A – Finance & HR specialization underwent her Project Study in Volvo Group India Private Limited, from 15th Jan 2018 to 26th Mar 2018.

She has successfully completed her Project Work in Finance Department of VCE Peenya.

She has satisfactorily completed her work assigned under the guidance of Ms. Priya Prakash, Deputy Manager Business Control, VCE. She has presented her complete Project findings on **"Cost Analysis".**

During the above period, we found her to be disciplined and dedicated.

We wish her all success in all her future endeavors.

VOLVO GROUP INDIA PVT. LTD. VOLVO BENGALURU

Raghavendra D K
Asst. Manager HR & Administration
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ACHARYA INSTITUTE OF TECHNOLOGY
(Affiliated to Visvesvaraya Technological University, Belagavi, Approved by AICTE, New Delhi and Accredited by NBA and NAAC)

Date: 18/05/2018

CERTIFICATE

This is to certify that **Ms. Rakshitha S** bearing USN **1AZ16MBA52** is a bonafide student of Master of Business Administration course of the Institute 2016-18 batch, affiliated to Visvesvaraya Technological University, Belagavi. Project report on **"A Study on Cost Analysis" at Volvo Construction Equipment, Bangalore** is prepared by her under the guidance of **Prof. Mallika B K,** in partial fulfillment of the requirements for the award of the degree of Master of Business Administration, Visvesvaraya Technological University, Belagavi, Karnataka.

Signature of Internal Guide

Signature of HOD

Head of the Department
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Signature of Principal

PRINCIPAL
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Soldevanahalli Bangalore-560 107

DECLARATION

I RAKSHITHA.S , hereby declare that the Project report entitled "A STUDY ON COST ANALYSIS" with reference to "VOLVO CONSTRUCTION EQUIPMENT" prepared by me under the guidance of **Prof. Mallika B K**, faculty of M.B.A Department, Acharya Institute of Technology and external assistance by **Priya Prakash**, Deputy Manager , Volvo Construction Equipment, Bangalore

I also declare that this Project work is towards the partial fulfilment of the university regulations for the award of degree of Master of Business Administration by Visvesvaraya Technological University, Belgaum.

I have undergone a summer project for a period of Ten weeks. I further declare that this project 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.

Rakshitha.S

Place: Bangalore

Signature of the student

Date: 25/05/18

ACKNOWLEDGEMENT

I deem it a privilege to thank our Principal, Dr.Sharanabasava Pilli, Dr. Mahesh, Dean Academics and our HOD Dr.Nijaguna for having given me the opportunity to do the project, which has been a very valuable learning experience.

I am truly grateful to my external guide Priya Prakash, Deputy Manager in Volvo Construction Equipment and my internal Guide Prof. Mallika B K for their research guidance, encouragement, and opportunities provided.

I wish to thank all the respondents from the firms who spent their valuable time in discussing with me and giving valuable data by filling up the questionnaire.

My sincere and heartfelt thanks to all my teachers at the Department of MBA, Acharya Institute of Technology for their valuable support and guidance.

Last, but not least, I want to express my deep appreciation to my parents for their unstinted support.

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EXECUTIVE SUMMARY

The project work on Cost analysis was done in Volvo Construction Equipment, Peenya , Bangalore.

The main intension of this project was to have a practical knowledge of different cost systems implemented by Volvo CE. This study covers various topics like prime cost , Selling & distribution , office & administration and the overall cost structure analysis of Volvo.

Volvo is a multinational company which s mainly into manufacturing and services of various construction equipment , buses , trucks , Volvo penta and also provides financial services. Volvo has its production in 25 countries and operates in more than 185 markets.

This research study was mainly designed to analyse the cost and managing the various cost in different segments of VCE; in order to reduce the cost and increase the profitability.

Cost analysis plays an important role in the firm which enables the company to reduce the cost and control the cost at the time of economic pressure. This study helps to check out where the company is spending more amounts for unnecessary use.

CHAPTER 1: INTRODUCTION

1.1.INTRODUCTION:

The project work aims to provide an opportunity of applying the theoretical aspects to practical in nature. It helps to develop the personality and capacity to handle and adapt to the situation on the real business field.

Through this project work the students can have a personal growth and acquire skills such as communication skills, interpersonal skills, technical skills, management skills, and problem solving skills.

1.2.INDUSTRY PROFILE:

Volvo Construction Equipment is a manufacturing based industry as they are the manufacturers, suppliers of road machineries.

Manufacturing is the process of converting raw materials into finished goods or services; which can be sold in market or exported. The process of trade is based on fabrication, processing of products.

Before the Industrial Revolution the manufacturing industries was carried out by a single artisan with the help of assistants in rural areas; in that most of them were house-hold industries. The tool manufacturing industries were the first firm which came out with the specialized equipment process from raw materials / semi-finished goods to finished goods.

Manufacturing industries began with origin of technological and socio-economic transformation in the century 18^{th} to 19^{th};

This period was known as an “Industrial Revolution”. It began in Britain and replaced the labour intensive production with mechanization.

These manufacturing industries are the chief wealth sectors of the Indian economy. Manufacturing industries can be classified into engineering industries, electronic industry, chemical industry, energy industry, construction industry, food & beverage industries, textile

industry, transport & telecommunication industry etc... These manufacturing industries use various technologies and methods known as the process management.

The new and latest technologies have provided an advanced growth in manufacturing employment opportunities; in which they provide material support for national infrastructure and national defense.

The modern manufacturing industries are contributing to the country economic growth and these industries are like the backbone to the industrialized society. Many manufacturing industries involve environmental costs and social costs; as many hazardous wastes may cause health risk to the workers. And there are industries which look after in reducing wastes and eliminating harmful chemical by improving the efficiency.

1.3.COMPANY PROFILE:

Volvo Construction Equipment Pvt Ltd is a subsidiary business area of Volvo Group; Volvo Group being the parent company which is being headquartered in Gothenburg, Sweden. It is a Multinational Manufacturing Company. Its main activity is into production, distribution and sales of construction equipments, buses, cars and trucks; and also supplies industrial drive systems, marine and financial services.

Volvo AB was established in 1915 as a subsidiary of a ball bearing manufacturer; i.e. SKF. The name Volvo was registered in May 1911 to use it for new series of SKF ball bearings. The word Volvo was derived from a Latin called ‘Volvere’ which means ‘I Roll’.

The Sales manger - Assar Gabrielsson and Managing director – Bjorn Prytz of SKF were the founders of Volvo AB in 1926. Initially the Volvo Company was functioning as a subsidiary automobile with SKF group.

Volvo Construction Equipment is as part of Volvo Group which has 100,000 employees approximately and has its production in more than 25 countries and operates in 185 plus markets.

- **Volvo Construction Equipment:**

Volvo CE was founded by Munktells, Bolinder-Munktell, Volvo BM; it is an international company that develops, manufactures & markets equipment for construction and other related industries.

VCE was started in 1832 by Johan Theofron Munktell in Eskilstuna, Sweden. This company has grown and developed throughout the years by many mergers and acquisitions. The blue logo of company indicates compliance. The company manufactures construction machines such as articulated haulers, excavators and wheel loaders.

Volvo Construction Equipment located in Peenya is a part of global Volvo Construction Equipment under Volvo India Pvt Ltd entity. Volvo Construction Equipment operations facility in Bangalore has total area of approximately 57000 sq. meters with factory occupying over 27000 sq. meters.

The plant started its operations in 1978 this was mainly started up for the need of mining industry and road construction sector. The Volvo Group took over this plant in year 2007 and later expanded to cater the needs of Construction Equipment by manufacturing excavators, compactors, pavers.

There are 58% of people who work for operations and there are 13% women employees contribute to white collars job. Their core values are Safety and Quality and Environment. Volvo sells approximately 1600 construction equipment machines per annum.

- **Volvo Construction Equipment journey with safety leadership and innovation till 2013 in India:**

Table 1.3 – Representing history of VCE

1997-98	Formation of Volvo India
1999	Delivers first Articulated hauler
2000	Expands operations and introduces- hydraulic excavators, wheel loaders and motor gardens.
2004	Establishments of parts- now Logistics services
2006	Portfolio with new motor garden and hydraulic excavators series
2007	Acquisition of Ingersoll Rand's manufacturing plant in Peenya, Bangalore
2008	Launch of state-of-the-art Customer centre in Hosakotte
2009	Launch of SDLG range of products
2010	Launch of Care track Fleet Management Systems.
2011	Expansion of products with Reman and attachments for various applications
2012	Achievements of 10,000 machines populations and the launch of call centers for market operations.
2013	Launch of D series excavators in the Indian markets

- **5S Program in Volvo:**

The 5S program is a system for performing the work effectively, efficiently and with safety. This program helps in keeping the work place clean; makes the job easier for the workers without any risky injuries or by wasting time.

5S involves organizing spaces and things logically; it removes what are unnecessary things; also helps in performing housekeeping tasks.

Benefits of 5S Program:

- Employee satisfaction
- Cost reduction
- Higher Quality
- Safety environment
- Increase in productivity

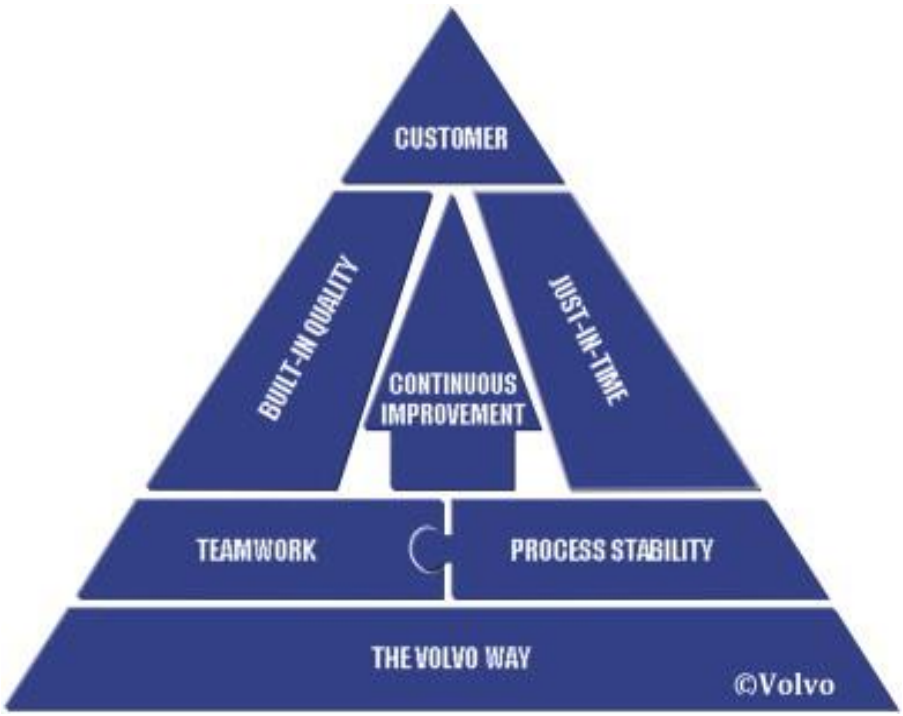
❖ Volvo Production System:

Volvo Production System was first introduced in the year 2007; mainly to make way for continuous improvement in quality delivery and good productivity.

VPS is where how Volvo does its work from words to action. This contains the practical tools and helps the organization to work efficiently and effectively.

It has five core principles to guide and assist the organization towards its objectives and shared goals, they are:

- Leadership
- Safety & health
- Environment care
- Team work
- Lean manufacturing



1.3.1 PROMOTERS:

There three main promoters for the Volvo Group namely Assar Gabrielsson, Gustaf Larson, Martin Lundstedt.

- **Assar Gabrielsson:**

He was a Swedish industrialist and co-founder of Volvo. He was employed by Bjorn Prytz at the sales department in 1916. He managed the SKF subsidiary in Paris and later became the Sales Manager for SKF. And in 1926 he was appointed as a Managing Director at AB Volvo.

- **Gustaf Larson:**

Gustaf Larson was a co-founder of Volvo who was a Swedish Automotive engineer; he was mainly responsible for technical design, later he was appointed as the Technical Manager and Vice President of AB Volvo.

He specially designed an innovative and new featured car named PV4 which became a huge success and there after the production of car increased and brand name also went up in the market. His contribution was enormous especially in fields of trucks and cars.

- **Martin Lundstedt:**

He is a Swedish businessman and he has been the CEO and President of Volvo Group since 2015.

He has an experience of 25 years in development, production and sales with heavy automotive industry.

Prior to the Volvo he had held various managerial positions since 1992; he was also a Co-chairman of UN Secretary at General high level Advisory Group.

1.3.2 VISION, MISSION & QUALITY POLICY:

Vision:

To be the most desired and successful transport solution provider in the world

Mission:

Driving prosperity through transport solutions.

Quality Policy:

"The Volvo Group shall be the leader in customer satisfaction, delivering pioneering products and services for the transport and infrastructure industries. All business entities shall contribute to this achievement through customer focus, commitment and participation by everyone, a process based approach and continuous improvement."

- Customer focus
- Commitment & participation by everyone
- Process approach and continuous approach

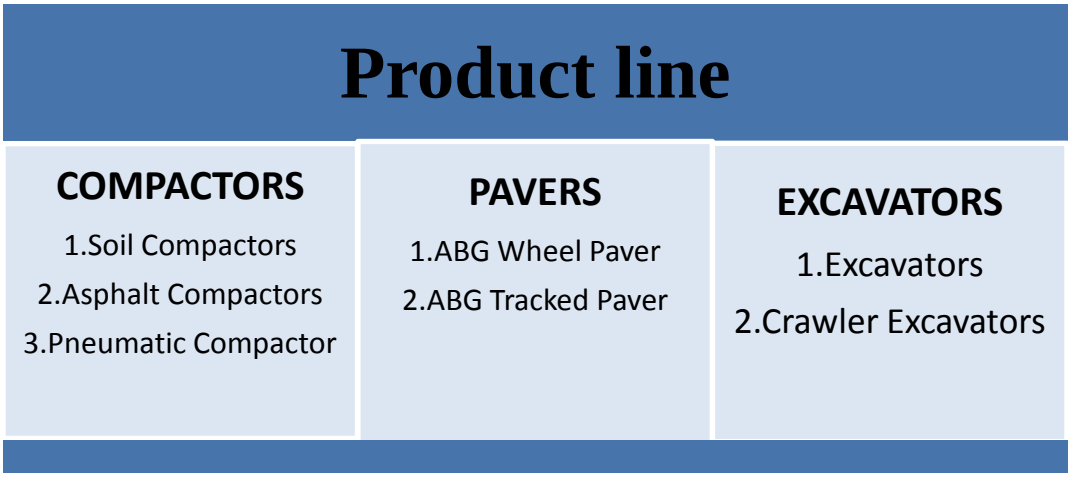
1.3.3 PRODUCTS AND SERVICES:

PRODUCTS:

In Volvo Group have many brands:

- Volvo Trucks
- Volvo Buses
- Volvo Cars
- Volvo Construction Equipment
- Volvo Penta

In Volvo Construction Equipment, Bangalore there three main product line. They are:



❖ PRODUCTS MODELS NAMES:

Table 1.3.3 – Representing product line

COMPACTORS	Soil compactors	SD110
	Asphalt compactors	DD90B
	Pneumatic compactors	PT220

PAVERS	ABG Wheel paver	P4370C
	ABG tracked Pavers	P5320B

EXCAVATORS	Excavators	DC210D
	Excavators	EC210D
	Crawler excavators	EC300

The other construction equipment's are:

Wheel loaders	L350F
	L180H
Volvo dumper	A60H
	A45G

1) COMPACTORS:

Compactor is a machine used to reduce the size of materials; often used to reduce the volume of trash. In compactors there are 3 types; the plate, jumping jack and road roller. In Volvo they mainly concentrate on road construction equipment.

- **Soil compactors**: these machines give you reliability, quality and safety; they also deliver all the compactions which are needed. Volvo soil compactors are versatile machines that effectively and efficiently compact varying soils and aggregates in application such as large residential, site preparations, highways etc…

SD110

Bucket Capacity- 11,000 kg

Operating Weight – 77 kW

Tipping Load – 190/240 kW

- **Asphalt compactors**: these are the double drum which delivers a mat finish in fewer passes without compromising fuel efficiency. They are the wide range of options to maximize the productivity. Volvo Asphalt Compactors are those which have superior drums width and high frequency which helps in rolling faster and increases its performance.

DDD90B

Operating Weight – 8550 KG

Rated Engine Power – 56 kW

Drum/Rolling Width – 1675 MM

- **Pneumatic compactors:** These kinds of compactors offer smoothest compaction and provide high performance which helps to finish the work on time; it is usually designed for roadway applications. This compactor is followed by double drum to produce a perfect mat finish.

DPT220

Operating Weight – 24,000 KG

Rated Engine Power – 99 kW

Drum/Rolling Width – 1980 MM

2) PAVERS:

It is equipment used to lay asphalt, concrete, cobblestone, bricks, tiles etc… It lays asphalt flat and provides minor compaction before the roller. The pavers mainly reduce the maintenance cost as it has lower operating cost and more productivity.

- **ABG Wheel paver:** it is the most advanced paver; it delivers superior productivity with excellent paving quality & reliability.

- **ABG trackedPavers:** Volvo has 60 years' experience in road construction, where these ABG wheel pavers met all the needs for paving machines; these are ideal mainly for medium and long scale projects. This paver is a powerful and has a precise paving.

3) EXCAVATORS:

It gives maximum lower and performance in various applications such as site preparations, excavation to demolition, truck loading, trenching etc…this equipment enhances more profitability. They are equipped with advanced hydraulics and versatile quick fit system. It is a class leading in fuel economy and it increases the productivity.

Excavators:

Crawler excavators

- **OTHER EQUIPMENTS:**

Wheel loaders

Volvo dumper

SERVICES:

Volvo Group in addition to the machines and vehicles it also includes various types of services such as insurance, rental services, financial solutions, preventive maintenances, spare parts, service agreements, IT services and assistance services.

The main services which the company mainly concentrates on are:

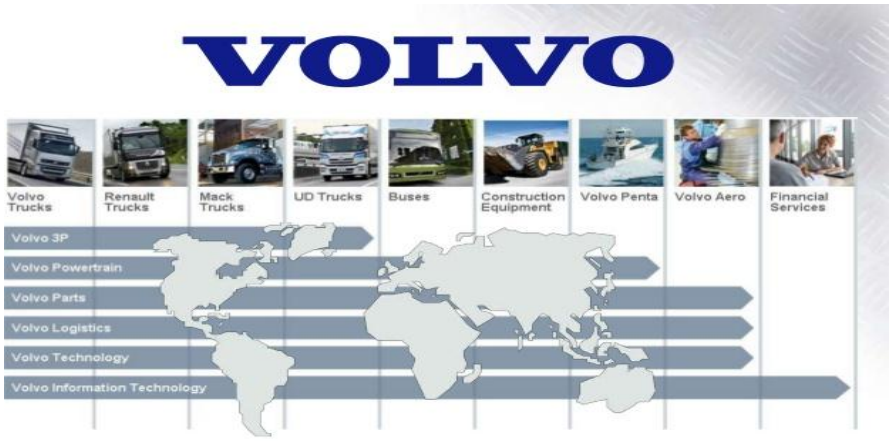
- Safety services
- Financial services
- Productivity services
- Uptime services
- Fuel efficiency services

The other few areas where the company looks after the services to meet and satisfy the customer needs and wants are:

- Efficient workshops
- Services and maintenance agreements
- Transport information systems
- Remanufacturing services
- Assistance to keep vehicles in operation.

1.3.4 AREAS OF OPERATIONS:

Volvo Group has a global presence and it is the one of the world's leading manufacturers of buses, trucks, marine, construction & equipment and industrial engines.



In 2017, Volvo Group approximately had 100,000 more employees across 18 countries operating in 190 plus markets.

Table 1.3.4 – Representing areas of operation

MAJOR OPERATING COUNTRIES	**NUMBER OF EMPOYEES (as per 2017)**
Europe	47,561
Asia	16,526
North America	15,882
South America	4,774
Africa & Oceania	2,361

In Asia the biggest markets are in Japan, China, India, South Korea, and Indonesia.

The glimpse of Volvo Group in India:

3	Manufacturing plants
40,000	Volvo group vehicles on road
3,500	Volvo employees
90,000	Trained divers for trucks and buses
400	Sales and support point
Strong partnership	Between Volvo Group and Eicher Motors Limited

1.3.5 INFRASTRUCTURE FACILITIES:

Infrastructure plays an important role in the company to carry on the operations effectively and efficiently by the employees. Volvo Construction Equipment has a very good infrastructural facility.

As the company treats the employees as the real assets of the company they provide certain facilities like cafeteria, refreshment area, parking lot, workshop area, walk path for safety measures, canteen facility.

Company also provided well equipped cabin for each employees and there are seminar halls, board rooms with the required lightings and ventilation, and emergency exit in case of emergency ; also provides purified water services for the employees.

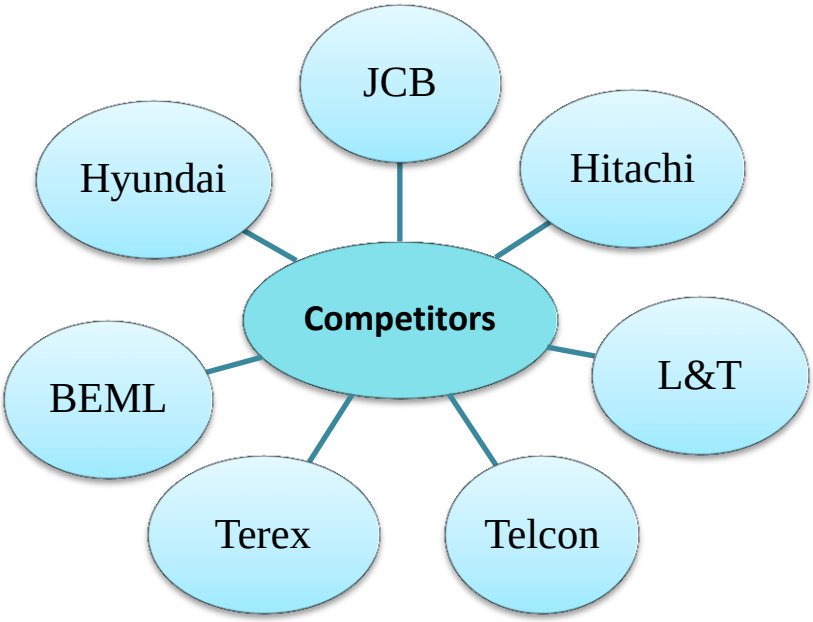
Few other facilities which company provides are:

- Research & development – approach to innovation as the latest technology is not just to use its very much essential to stay completive in the market and earn profits; hence there is chance for the employees to come up with new and latest innovations.

- Production faculties – in India there are 3 production plants and there are totally 18 more countries into production.

- Distribution Network – the dealers who distribute the products are an important bridge between the company and the customers.

1.4 COMPETITORS INFORMATION:



- **JCB**:

  It is a multinational corporation, founded by Joseph Cyrill Bamford in 1945, head quartered in Rocester, England. The full form of JCB is J.C.Bamford Excavators Limited. It's the world's 3rd largest construction equipment manufacturer. It has 18 manufacturing plants in world and sells its products globally across 150 countries.

  It produces more than 300 types of machines/products such as construction equipment, agriculture machines, waste handling and demolition machinery.

- **Caterpillar**:

  It was founded in 1925 with merger of Holt manufacturing company and C.L. Best Tractor Company. In 1986 the company registered as Delaware Corporation by the name – Caterpillar Inc, headquartered in Deerfiled, US.

  It is an American Fortune corporation. It develops & designs, manufacturers, markets and sells their products and services such as machinery, engines, financial products and insurance.

- **L&T**:

  Larsen & Toubro limited is biggest Indian multinational company, founded in 1938 headquartered in Mumbai, India. The company is into engineering, construction, manufacturing, information technology and financial services.

  The products that are manufactured under this company are heavy equipments, electrical equipments, power machinery, ship building. And various services are real estate, construction, financial services and IT services.

- **Terex**:

  It was founded by George Armington in 1933 in US; this company is an American worldwide manufacturer of lifting and material handling solutions for various industries such as construction, mining, shipping, quarrying and energy.

  The major segments are cranes, material handling and port solutions, aerial work platforms and construction equipments.

1.5 SWOT ANALYSIS:

It is an analytical frame work done to analyze the company's internal strengths and weakness; and external threats and opportunities.

Strengths mean the advantages, capabilities, resources, assets etc... And weaknesses mean the deadline & pressure, lack of competitive strengths, vulnerabilities etc... But these strengths and weakness can be controlled internally.

Opportunities mean the market developments, business and product developments etc... And threats means the obstacles, market demand, environmental effects etc... But these opportunities and threats cannot be controlled as they the externals factors for the company.

SWOT ANALYSIS OF VOLVO:

❖ **STRENGHTS:**

- Variety in models.
- Innovations.
- High safety standards.
- Maintaining quality in products and services
- Strong market position.
- Good customer relationship

❖ **WEAKNESSES:**

- Limited penetration in middle income segments.
- Low level of advertisements.
- Costs of products are high when compared with others.

❖ **OPPORTUNITIES:**

- Technology revolution.
- Customizing the products as per customer needs.
- Acquiring more market share.
- To take up government projects

❖ **THREATS:**

- High costs.
- Huge completion from international markets.
- Sudden changes in government policies.
- Fluctuations in exchange rates.

1.6 FUTURE GROWTH & PROSPECTUS:

Since Volvo is in present in India from past 19 years it is keep on growing towards creating value for India.

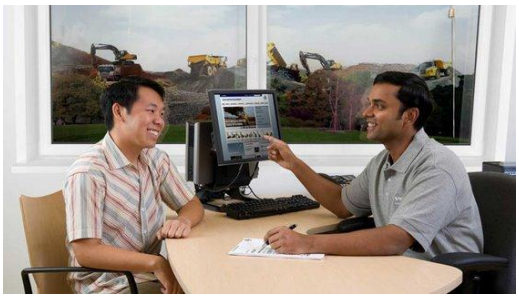
Volvo Group has future goal towards establishment of new segments and introduce novel concepts. VG actively gets engaged in national priories such as Smart cities; Make in India; Electro mobility and seeks to provide sustainable transport solutions and VG also aims to improve quality life & good development in India.

- **Fuelling Indian Waterways –**

  Volvo Penta is offering power system solutions for Indian cargo vessels by using latest technology of diesel engines; they are also fuel efficient which saves 15-20% of fuel.

- **Skilling India –**

  Volvo operates RASTA Institute since 2012; this provides a focused area of road building technology and offering Post Graduate Degree to students. Volvo Group carries operator training program for unemployment youth.



- **Partnering for growth –**

  Volvo Financial Services is part of Volvo Group; they provide flexible financed solutions and enable local business to grow and gain a competitive edge by providing ready finance.

1.7 FINANCIAL INFORMATION:

Analyses of financial information:

- **Quick Asset Ratio:**

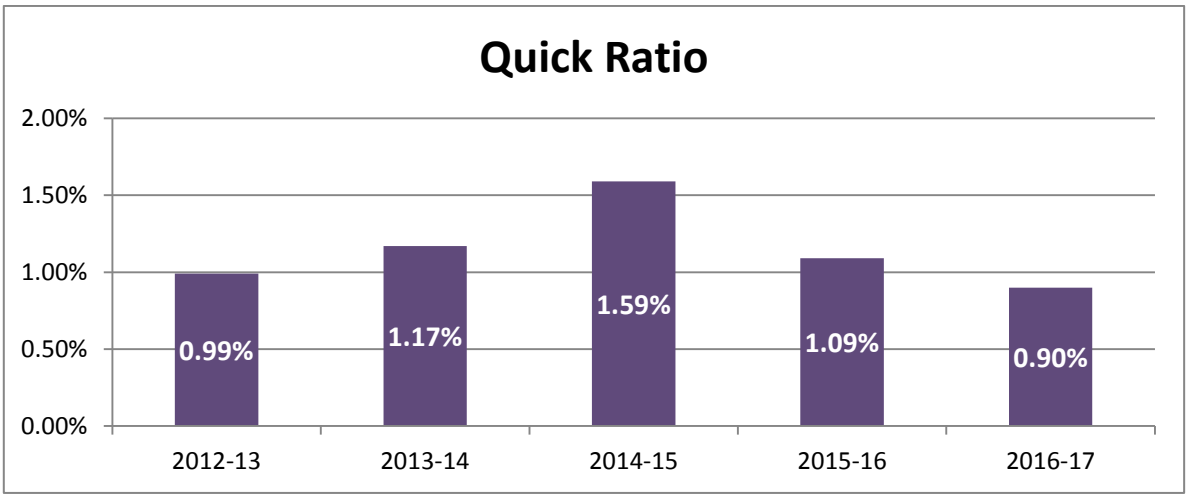
$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Quick Liabilities}}$$

Table no: 1.7.1 - Representing the % of analysis of quick ratio:

Year	2012-13	2013-14	2014-15	2015-16	2016-17
Quick Assets	1,40,064	1,60,061	2,47,868	1,70,328	1,60,754
Quick Liabilities	1,40,316	1,36,393	1,22,860	1,55,202	1,67,317
Quick Ratio	0.99	1.17	1.59	1.09	0.9

Analysis: the above table states that the quick ratio is being increased from 2012 to 2014, and later there is decrease in the value.

Graph no: 1.7.1 - Representing the % of analysis of quick ratio:



Interpretation: from the above graph it can be stated that the percentage of quick ratio varies from year to year which states that quick assets position of the company in not satisfactory.

- **Current asset to Net worth ratio:**

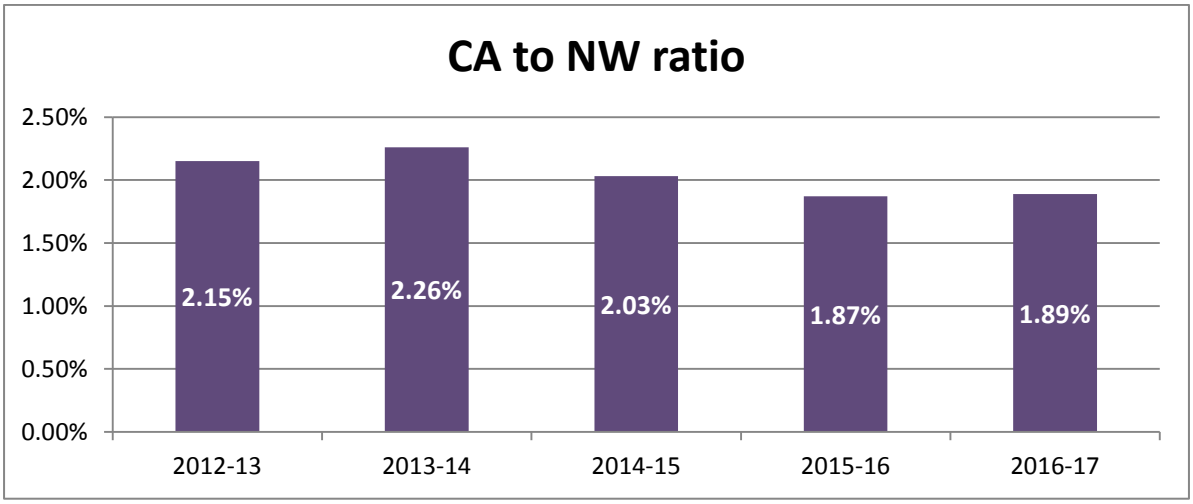
$$\text{CA to NW ratio} = \frac{\text{Current Assets}}{\text{Net Worth}}$$

Table no: 1.7.2 - Representing the % of analysis of current assets to net worth:

Year	2012-13	2013-14	2014-15	2015-16	2016-17
Current Assets	1,63,612	1,77,,302	1,70,687	1,80,301	1,99,039
Net Worth	76,032	78,325	83,810	96,061	1,07,069
CA to NW ratio	2.15	2.26	2.03	1.87	1.89

Analysis: the above table states that for 1st 3 years there is an increase in the ratio and for next 2 years the values have been decreased.

Graph no: 1.7.2 - Representing the % of analysis of current assets to net worth:



Interpretation: from the above graph we can interpret that % of CA to NW rate fluctuates from the year 2012-2013 to 2016-17 which states that the extent of investment of the proprietor on CA is more in 2012-13 to 2014-15 and in later years its less.

- **Gross Profit Ratio:**

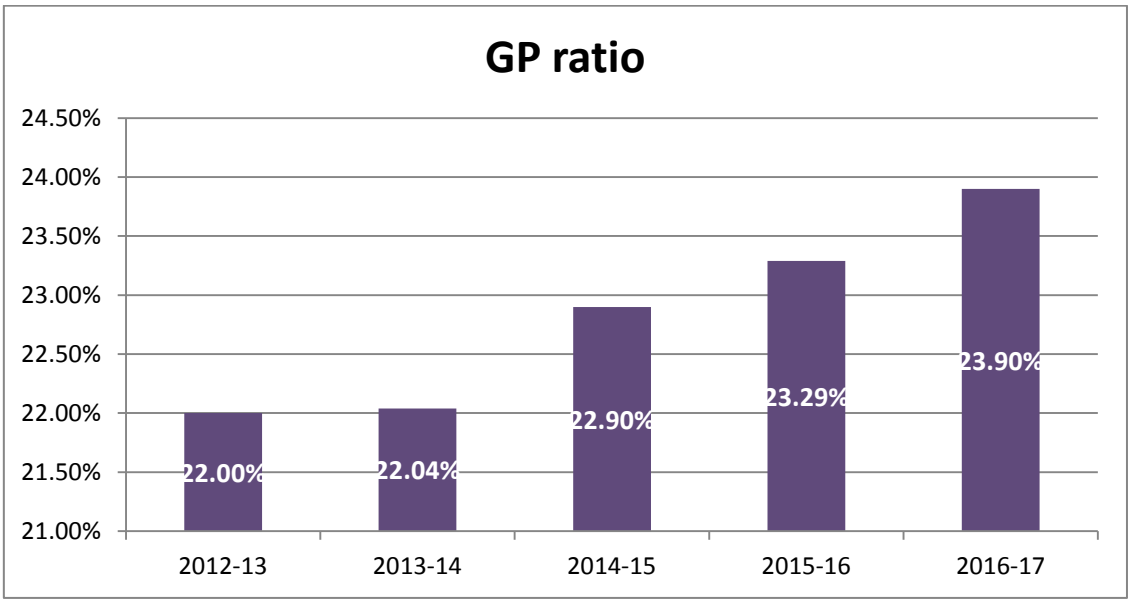
$$\text{Gross profit ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}}$$

Table no: 1.7.3 - Representing the % of analysis of gross profit ratio:

Year	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**
Gross profit	60,118	62,937	71,862	70,312	80,167
Net Sales	2,72,622	2,82,948	3,12,515	3,01,914	3,34,748
Gross profit ratio	22%	22.04%	22.9%	23.29%	23.9%

Analysis: the above table states that gross profit is been continuously increasing from 2012-2017 i.e. from 22% to 23.9%.

Graph no: 1.7.3 - Representing the % of analysis of gross profit ratio:



Interpretation: from the above graph we can depict that the GP ratio is increasing year by year from 2012-17 which is the good sign. This states that the company position and its efficiency is increasing year by year.

- **Inventory ratio:**

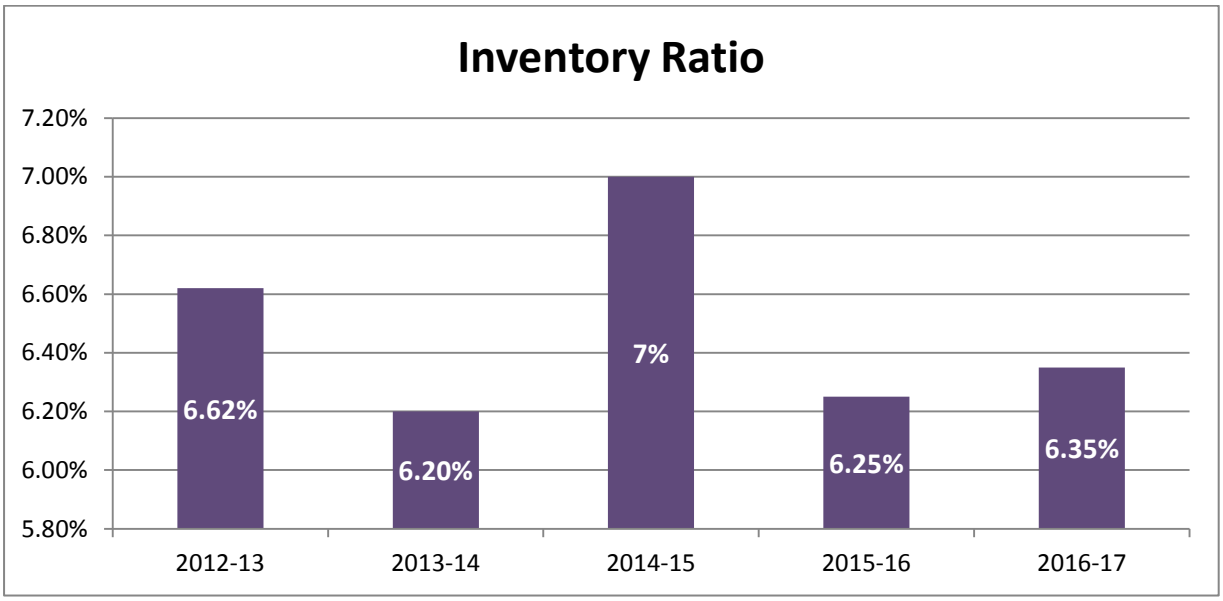
$$\text{Inventory ratio} = \frac{\text{Net Sales}}{\text{Inventory}}$$

Table no: 1.7.4 - Representing the % of analysis of inventory ratio:

Year	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**
Net Sales	2,72,622	2,82,948	3,12,515	3,01,914	3,34,748
Inventory	41,153	45,533	44,390	48,287	52,701
Inventory ratio	6.62%	6.2%	7%	6.25%	6.35%

Analysis: the above table states that there are increase and decrease values of inventory in the each year.

Graph no: 1.7.4 - Representing the % of analysis of inventory ratio:



Interpretation: from the above graph we can interpret that the IR are decreasing which shows that the company have kept less stock when compared to previous year.

- **Proprietary ratio:**

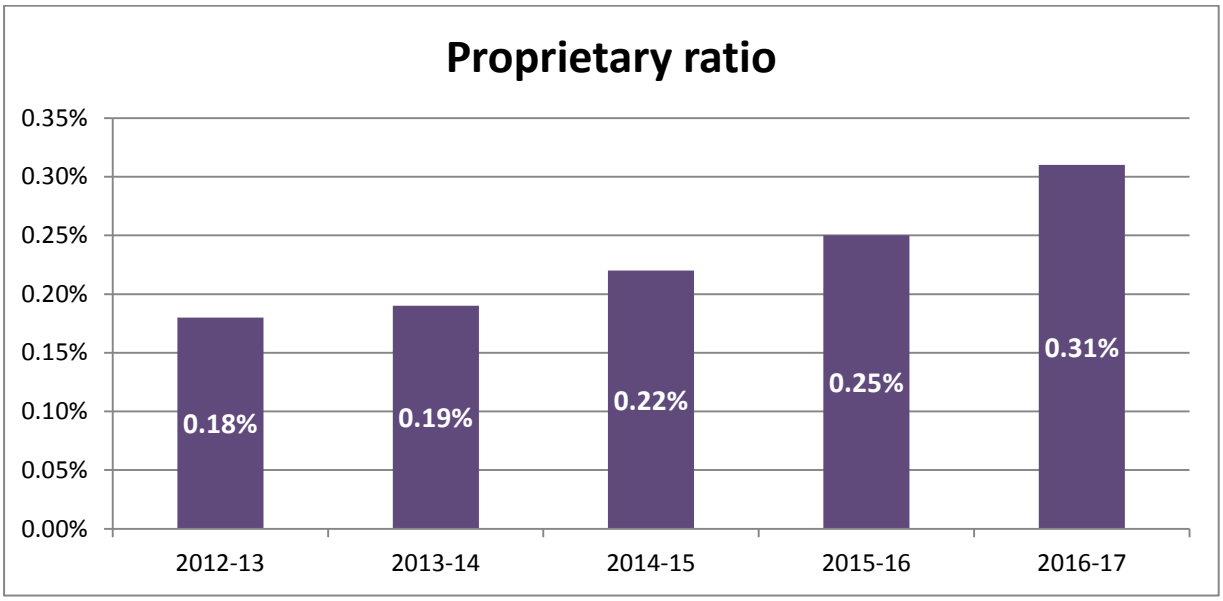
$$\text{Proprietary ratio} = \frac{\text{Net worth}}{\text{Net Assets}}$$

Table no: 1.7.5 - Representing the % of analysis of proprietary ratio:

Year	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**
Net Worth	76,032	78,325	83,810	96,061	1,07,069
Net Assets	4,12,494	3,98,916	3,74,165	3,82,896	3,44,829
Proprietary ratio	0.18	0.19	0.22	0.25	0.31

Analysis: the above table states that there is increase in the values of Proprietary ratio in the each year.

Graph no: 1.7.5 - Representing the % of analysis of proprietary ratio:



Interpretation: from the above graph we can interpret that the financial position of the company is good and is becoming stronger year by year.

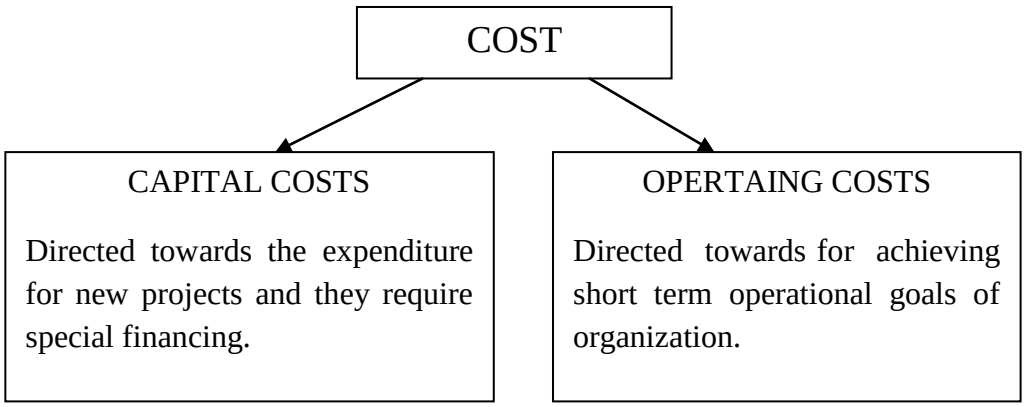
CHAPTER 2: CONCEPTUAL BACKGROUND AND LITERATURE REVIEW

2.1 THEORETICAL BACKGROUND OF STUDY:

- **COST:**

Cost is prepared to know the effective utilization of funds and to have the realization of the objective efficiently. To perform the functions such as formulation of plans, controlling, operating and co-coordinating activities; Costing is very much important and its acts as a powerful for the management.

Cost is a monetary valuation of the effort, resources, material, risk incurred, time & utilities consumed, opportunity taken in production and delivery of goods and services.



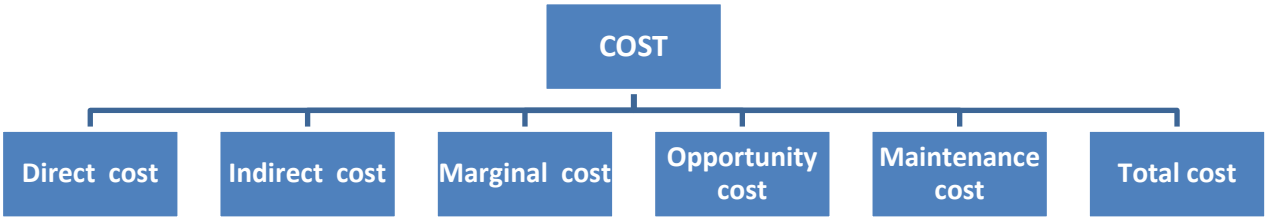
- **COST ACCOUNTING:**

Cost accounting is a process of collecting and interpreting the data to determine the risk and rewards of the organizations; and how will the organization earns and uses the funds.

Advantages of Cost accounting:

- Helps in cost modeling
- Actual cost can be compared with standard costs
- Helps in calculation of trend analysis
- Inventory valuation will be easier

❖ **TYPES OF COST:**



➢ Direct cost:

These are the costs which are directly accountable to the cost object; the cost of object may be a practical project, function, facility or product. Direct costs are those overheads costs which are directly attributed to the project taken into consideration.

E.g.: Direct - labour, raw materials, expense.

➢ Indirect cost:

These are the costs which are not directly accountable to the cost object. These costs may be variable or fixed. Indirect costs included personnel costs, administrative costs etc... These costs are not directly related to production.

➢ Opportunity cost:

This cost is considered as the choice of the best alternative cost while taking decisions. This is also known as an alternative costs. The choices have to be made between the several alternatives.

➢ Maintenance cost:

These are the costs incurred to maintain the goods in the good condition in prior to its breakdown. These costs include cleaning costs, lubricating the machines frequently, insurance machines etc...

It is better to have a less cost of maintenance cost by taking preventive measure so that breakdown of cost is decreased and there will be increase in profitability.

- Marginal cost:

Is it the cost of producing one more unit extra. Marginal cost is the change in the opportunity cost when the quantity is increased by one more unit. Marginal cost includes various types of cost which vary in levels of productions.

- Total cost:

It is cost of the total Economic cost of production which is made up of variable costs like quantity of labour, raw material etc... Total Cost is the total opportunity cost of each factor of production. The average total cost is calculated by the total cost divided by the output of quantity produced.

❖ COST ANALYSIS:

Cost analysis is a widely used technique for taking decision in the company as whether to make any changes or not in the cost modeling. It is where it adds up the value benefits and subtracts the costs associated with it.

It is carried out using financial benefits or financial costs. In simple terms it is an systematic approach to know the company/management strengths & weakness; used for calculating as well as comparing the benefits & costs of decision, policy or project.

PURPOSE OF COST ANALYSIS:

- To determine if a decision is feasible or not. (verifying its benefits outweigh the costs; and by how much is the cost is varying)
- To provide basis of comparing (involves in comparing total expected cost of each option against its total expected benefits)

❖ IMPORTANCE OF COST ANALYSIS:

A Cost –Benefit - Analysis is used to evaluate risks and rewards of various projects under the consideration. This analysis is useful for the projection of potential benefits for investing in markets ideas, product development, operational changes in the organization, infrastructural enhancements.

- **Evaluate Projects:**

Cost analysis helps to evaluate the rewards and risks in the projects and helps in comparing with the other alternatives; as to in which the company should be beneficial and get potential benefits out of many projects.

- **To prepare budgets and to know sales projection:**

The cost analysis made helps the company to make budget easier. If one has all the possible costs then projection of future budgeting can be done. The anticipated costs and benefits out of it can be used for projection of sales.

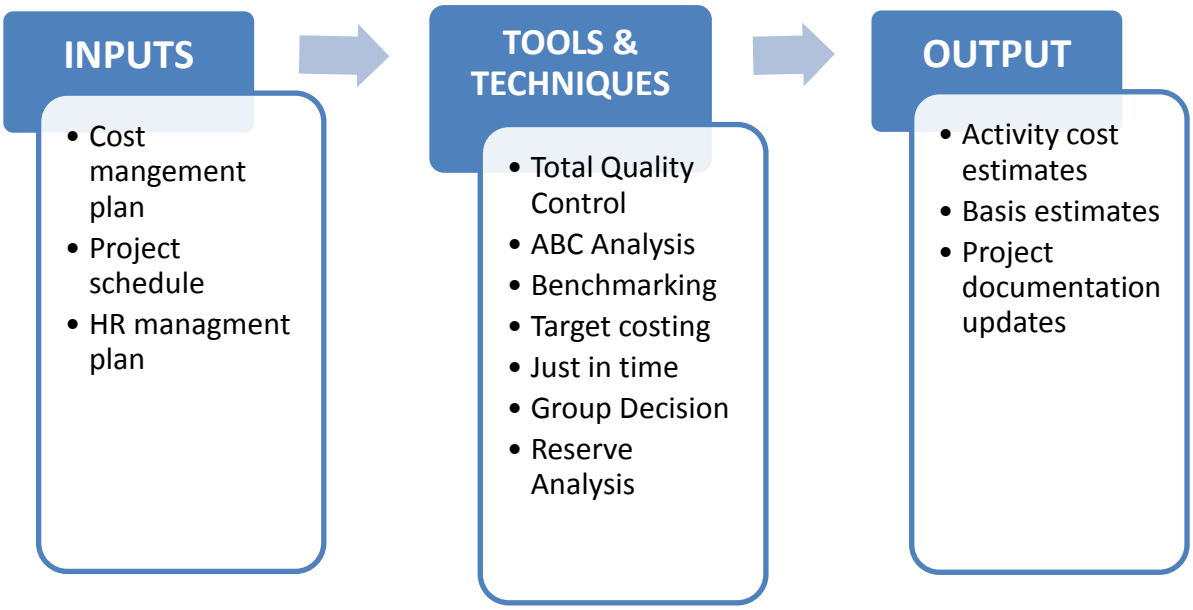
- **To prioritize investments:**

The cost analysis is very much useful for the business owners or the investors which helps them to analyze and compare among several choices. After the comparison and anticipating the profits investors can chose their projects for investments.

- **Establish goals:**

Once the projects have been selected and benefits of the possible projects are understood they can set the benchmarks & goals for the project. The benefits can be used to set goals for revenue , productivity, time management goals etc... Goals can be set for various projects such as finance, marketing, human resources and management.

❖ TECHNIQUES OF COST ANALYSIS:



➢ Total Quality Control:

TQC act as a key component for the organization which leads to success by providing better satisfaction for the customer in terms of quality products and by providing better customer services. This is done by optimal utilization of resources for the purchase of production which helps in reducing the cost.

➢ ABC Analysis:

It is one of the techniques of analyzing the cost. It identifies that stock which has a greater impact on cost of inventory. Here the stock or the inventories are divided into different groups based on their importance, controlling capacity and based on their values. Under this analysis inventories are divided into 3 classes:

A items which accounts to more annual consumption and are high value goods, were the other 2 groups B and C are given less importance when compared to A.

- **Benchmarking:**

It means the company sets the benchmarks or the targets to compare the performance with the other industry performances. The main aim of the benchmarking is to know the standards and performance of employees within the organization, which will help in further improvement and take the measure to reach the objectives and goals of the firm.

- **Target costing:**

Target costing is the cost required for the functioning and quality purpose for the life cycle of the product. The difference between selling price and profit margin leads to target costing.

- **Just in time:**

It is one of the techniques used by the company to increase the efficiency and effectiveness, to reduce the cost of waste at the time of production.

2.2 LITERATURE REVIEW:

1. **Kidane Firsum (2012)**

States that costanalysis plays very important role for taking decision for those organizations that are aiming to increase their profit. Cost analysis system should be framed well only then company can increases its profit and helps in taking correct decision related to the investment planning , management decision and cost control decision.

2. **Samantha Smith, Aoife Brick,SilnesadO'Hara(2013)**

States that the cost for proper distribution of resources, proper cost system is required in the field of Healthcare Service. From 46 database papers which were taken for review were examined with related to the cost, its implication and allocation. The main aim was on the direct cost associated with healthcare services related to palliative care is found to be expensive.

3. **Fujian Song,Phd. James Raftery,Phd. Paul Aveyard(2002)**

Does cost analysis related to Nicotine - Replacement - Therapy (NPT) and bupropion for the smoking cessation and NRT revealed that it is cost effective. No published study has stated about relative cost - effectiveness of bupropion for smokingcessation. Later it was found that the advice of adding NPT and bupropion smoking cessation is better.

4. **Choodoung, Sakkarian ,Smutkupt , Uttapol (2001)**

States that there are certain factors that are taken into consideration for the analysis of cost. Here the production is taken as a factor of solid wood furniture industry. The analysis of wooden chairs of two legged chairs and one of six legged chairs of pandemic in the United States are done. This describes that the assembly planning with less labour cost & less maintenance cost leads to effective cost control analysis.

5. **Boardman, Greenberg, Vining and Weimer (1996)**

Has identified certain steps which lead to effective cost analysis. The bank of England's Monetary and Financial Statistics Division (MFSD) conducted a workshop on cost benefitanalysis and states effective cost analysis has a higher impact on decision making. One of the best technique for cost benefit analysis is to achieve the goal by less expenditure by having a effective cost control system or to identify physical impacting factors and to take proper measures pertaining to that.

6. **Dr.Butalal C, Ajmera(2005)**

Had made a review on liquidity, efficiency of the company and on productivity of Birla Groups of Company with the help of using balance sheet, profit and loss account, strategy and research plan, investment management. Based on this it was found that Birla Group of companies has earned profitability.

7. **Webner(1911)**

States the production factor constitutes a lot for cost analysis which includes material, other related expenses and cost of labour.

8. **Sachdeva and Umesh Sharma (2006)**

Describes that purchasing of materials, cost of related expenses which includes fabrications for the product place a significant role in management of material which intern leads to cost effective system.

9. **P.J. H Baily(1973)**

Had made research on purchase department. If the department is not effective in planning those orders required for production at a proper time which leads to problem.

10. **John Christian,Gillin, Amar Pandeya(1997)**

States about difficulties that manager faces in the business like operating cost and maintenance cost calculation. These things are highly difficult to predict and it is too difficult to obtain accuracy based on research and hence it states to develop certain analyses related to analysis on regression which help to have an estimation relating to cost.

11. **Mikhail Chester and Chris Hendrickson (2005)**

Describes that construction cost increases only when there is a delay, when the work is said to be defective, when strikes takes place, acceleration, and cost cutting.

12. **Federal Highway Administration(FHWA)**

States about the lifecycle cost of highway payment design. These are certain components of cost which includes investment; maintenance cost etc. plays a very important role in analysis of cost control system.

13. **Rajiv Bhatt (2006)**

Cost, may increase due to certain reasons like if the payment made is late from customers or clients, if the materials required to be supplied are late, due to inflation or if the possession of site is delayed.

14. **Stefania-Eliza and Florin (2009)**

States about production cost analysis, its evaluation and how intern it increases the efficiency, effectiveness and profitability of the business. The book named "Q finance" states about the cost that are incurred when product is launched in market which includes advertising, distributing, marketing. This depicts clearly about the cost structure.

15. **N.B Jadhay (2013)**

States about analysis on cost in Pharmaceutical industry. There is a huge change in the prices of drugs. He researched on oral anti-diabetes of different brand names by the evaluation percentage cost of variation, based on it he found the brand names of same drugs are made and marketing management of drugs should increase its benefits and decrease negative effects.

16. **Samuel, Suresh and Varniarajan (2007)**

Describes of analysis of cost in co-operative sugar mills and states that if the cost control methods are effective then the firm can increase its profitability. There should be same control of purchase price and sale price of sugar canes. The company can adopt a new approach called ABC- activity based costing to increase its profitability.

17. **Demos.C Angelidas(2002)**

States that only technical practices are not enough to manufacture and supply goods. It should have a good project management teams who evaluates supply of quality product and services at time by minimizing the cost and by maximizing the profits.

18. **John Poorman(1995)**

Estimated marginal monetary costs of travel in the capital district, Capital District Transportation Committee (Albany). This report describes the Least Cost Framework and Model, with performance measures and monetized costs for evaluating transport investments and policies and helped in comparing various models.

19. **Compton and Brinken (2003)**

Describes that each cost is different from one another and only some are evaluated for making decisions.

20. **R K Uppal and RimpiKaur (2009**)

Describes as which are the aspects of the cost can be reduced in banking sector. The funds allocation and utilization play a significant role to increase the income with reduction in cost. These aspects depend on the policies and future strategies and techniques adopted by bank to increase income and to reduce the cost.

CHAPTER 3: RESEARCH DESIGN

3.1 STATMENT OF PROBLEM:

Cost analysis includes findings the various types of direct and indirect cost incurred. This total cost becomes base for fixing the selling price and also for the further variance analysis. In this regard, there is a need to take individual type of cost like prime cost, office & administration cost and selling & distribution cost and analyze them. This becomes a base for the company for fixing their policy for determination of selling price.

3.2 NEED OF STUDY:

- Cost analysis is the only way to maximize the profits in the current markets.
- Cost reduction in company is the biggest tool to increase the profitability.
- Implementing effective cost-reduction strategies can be a determining factor for survival of the company in the market for long run.
- To decide as to which cost can be reduced more effectively.
- Volvo Construction Equipment challenge is to have main control on cost; hence cost analysis is necessary.

3.3 OBJECTIVES:

- To determine material framework of cost control.
- Performance of cost system is studied.
- To analyze cost system in Volvo CE with reference to their different departments in the organization.
- The study aims at the evaluation to the current cost system with reference to other types of cost.

3.4 SCOPE OF STUDY:

- To have a detailed study on cost system in Volvo Construction Equipment was not able as the study was restricted only to Volvo CE, Peenya, Bangalore.
- To have a detailed ABC analysis of different departments in the company.
- To determine the policies related to cost control system to meet the objectives of the firm.

This study is designed to cost reduction, cost control and managing of costs on various equipments. Analyses of applying cost accounting techniques. This research covers various items of fuel cost, direct wages and salaries and other costs related to procurement and distribution of equipments.

Plan of Analysis:

The collected data is primary and secondary and its complied, classified, tabulated and then analyzed using the cost of computing and statistical tools, tables, charts and graphs are used to highlight the statistics.

3.5 RESEARCH METHODOLOGY:

The study is concerned with financial characteristics of Volvo Construction Equipment. The study also covers the reasons for fluctuations in the costing position in the firm.

❖ **Data Collection:**

The data can be collected by primary and secondary sources.

- **Primary data-** is collected through personal interview with the manager and officers & taking their perception with regard to topic of the study.

- **Secondary data**- is collected from the past financial records of the company, i.e. balance sheets, profit & loss account, annual reports of the company and other financial statements. And other journals, newspapers, magazines, publication and websites are referred to obtain information.

3.6 LIMITATIONS:

- Use of resources by the company may be restricted due to the few financial and budget factors.
- The analysis is study is limited for a specified period of time and is limited up to the information and data provided by company.
- In detail analysis cannot be done due to time; as we had only 10 weeks of duration.

3.7 CHAPTER SCHEME:

- **Chapter 1 - Introduction**

This chapter gives the details about the industry and company profile , competitors information, SWOT analysis, future growth & prospects and the financial statements. The company profile includes the promoter details, vision & mission and its quality policy , the product details , infrastructure and areas of operations.

- **Chapter 2 – Conceptual background and literature review**

This chapter describes about the theoretical background of the study on topic and the literature review.

- **Chapter 3 – Research Design**

This includes the statement of problem , needs , objectives , scope of the study, research methodology , limitations of the study and the chapter scheme.

- **Chapter 4 – Data Analysis & Interpretation**

This chapter includes the data analysis & interpretation of the company related to the topic by representing the graph.

- **Chapter 5 – Findings , Conclusion & Suggestions**

Under this chapter the summary of findings and their conclusions & suggestions for the company are described.

CHAPTER 4: ANALYSIS & INTERPRETATION

Data:

To analyze the data of the Volvo Company balance sheet, profit and loss account, some table's tools graphs has been used. The information needed for the study is taken from the annual reports of Volvo Group.

The cost structure of the Volvo Company is divided into;

- Industrial Operations
- Financial services

All the amount mentioned are in SEK that is the Swedish currency notes as the head quarters of Volvo is situated in Sweden.

4.1 Cost Analysis of Prime Cost:

Table 4.1 – Representing total Prime cost

PARTICULARS	2012-13	2013-14	2014-15	2015-16	2016-17
Material cost	98,700	87,090	92,500	99,113	95,840
Direct expense	3,250	4,660	5,307	9,745	2,117
Direct wages	48,780	55,400	53,860	52,756	84,400
TOTAL	**1,50,730**	**1,47,150**	**1,51,667**	**1,61,614**	**1,82,357**

Analysis: this above table shows that the total prime was 1,50,730 in 2012-13 and in the upcoming year the cost is increased; in 2016-17 the prime cost was amounted to 1,82,357.

Graph 4.1 – Representing the various prime costs.

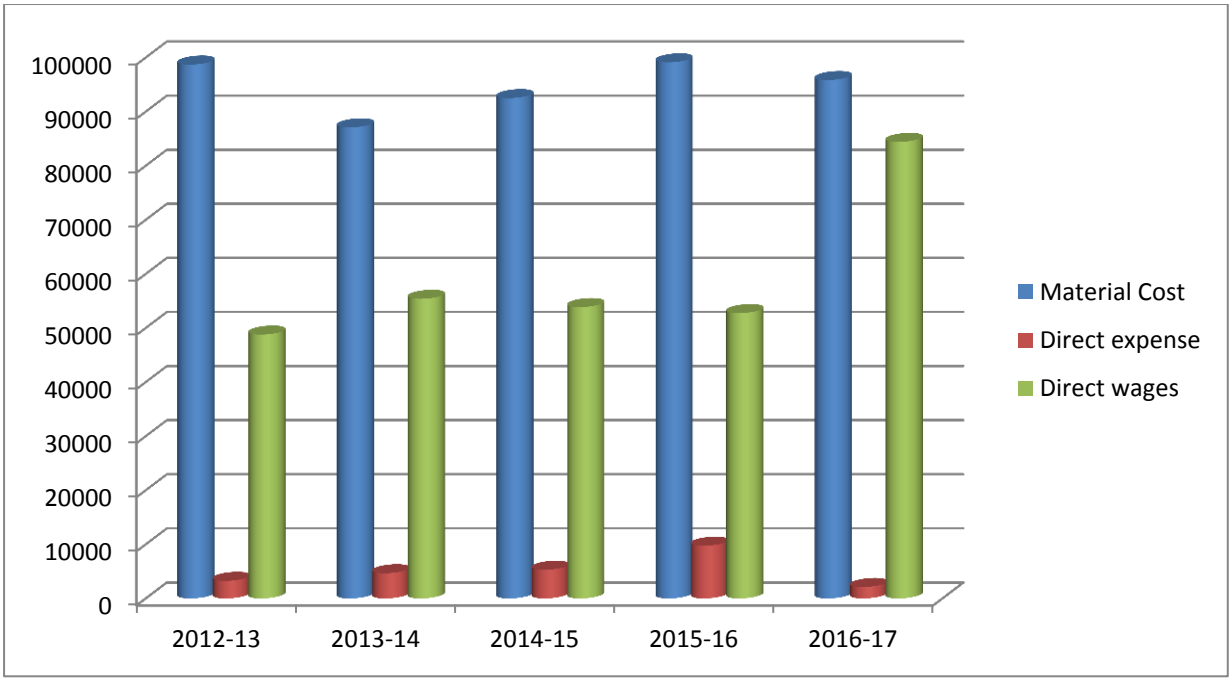
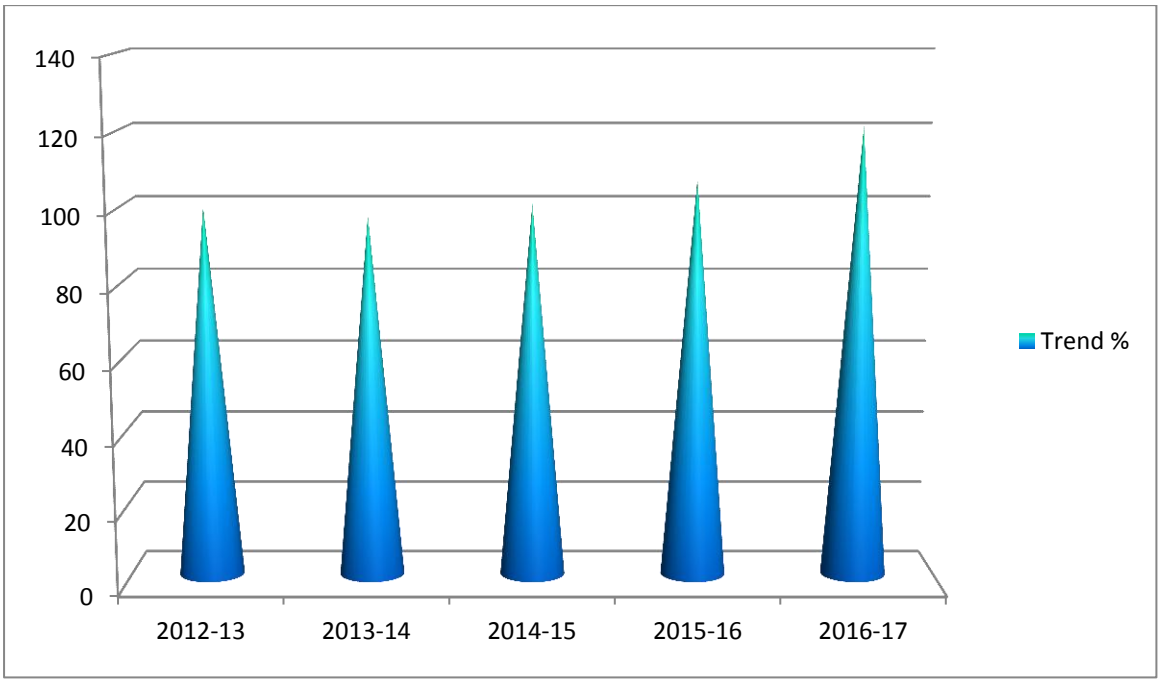


Table 4.1(a) – Computation of trend calculation:

Year	Total Prime cost	trend%
2012-13	150730	100
2013-14	147150	97.62
2014-15	151667	100.62
2015-16	161614	107.22
2016-17	182357	120.98

Graph 4.1(a) -Representing the Trend%



Interpretation: This above graph shows that the total prime cost in increasing year to year; which states that year by year the materials purchased, expenses incurred and the wages are increasing in turn which results in high production; this leads to increase in the trend.

4.2 Cost Analysis of Office & Administrative Overhead:

Table 4.2 – Representing Office & Administrative Overhead

PARTICULARS	2012-13	2013-14	2014-15	2015-16	2016-17
Legal charges	946	876	569	751	502
Establishment charges	1,283	1,200	1,280	1,120	1,412
Admin charges	2,580	2,320	3,000	2,410	2,624
Bank charges	1,053	1,012	920	840	1,104
TOTAL	**5,862**	**5,408**	**5,769**	**5,121**	**5,642**

Analysis: This above table shows that in 2012-13 the total office and admin cost was 5,862 and in next year the cost came down to 5,408; later in 2016-17 the cost was 5,642

Graph 4.2 – Representing the various heads under Office & Administrative Overhead.

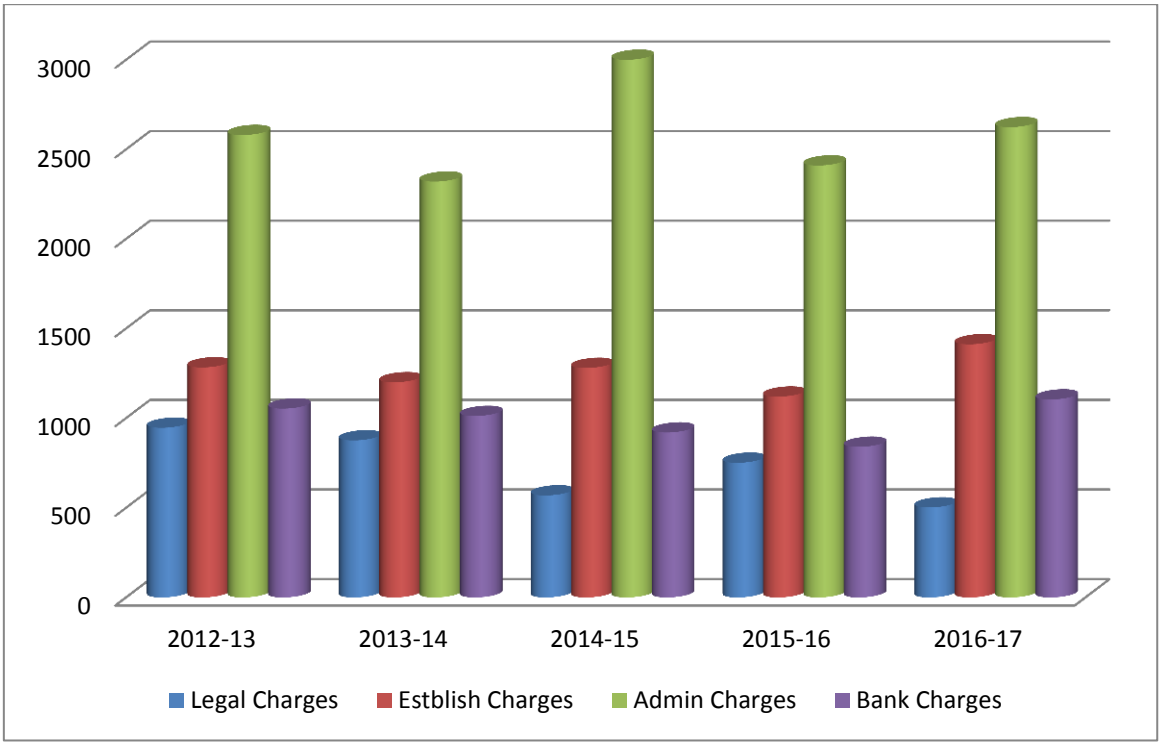
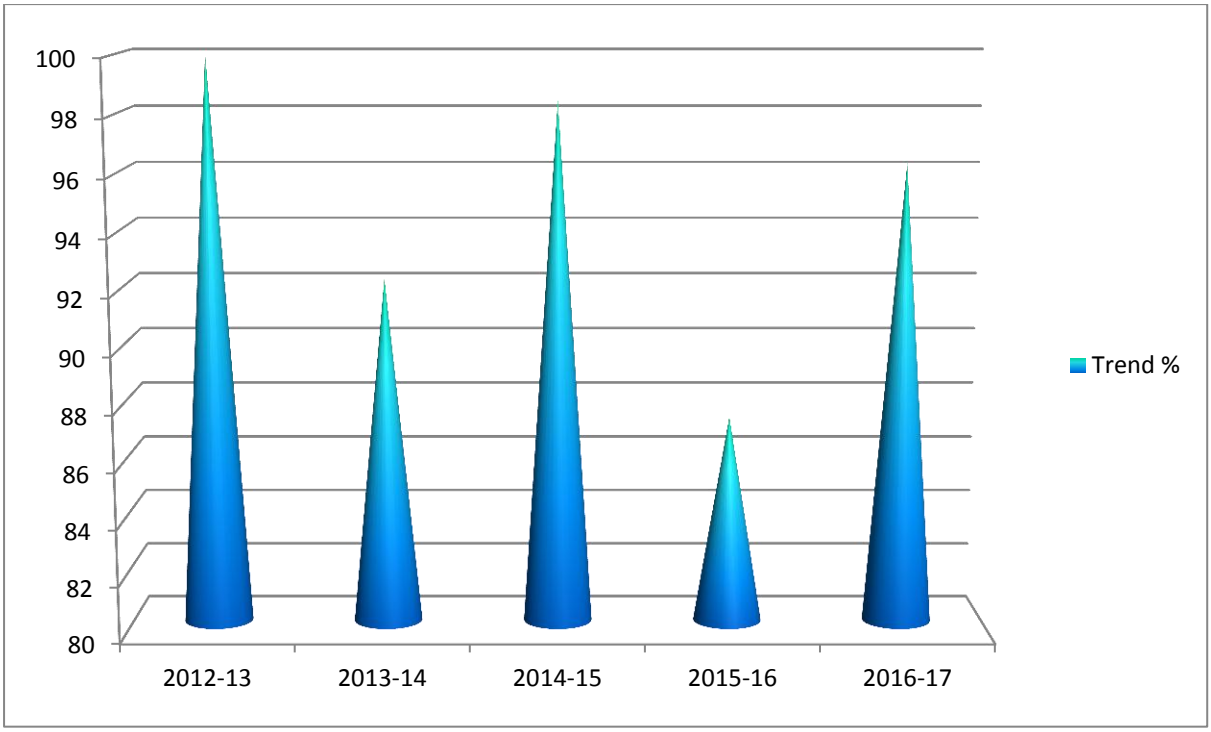


Table 4.2(a) – Computation of trend calculation:

Year	TC of Office &Admin	Trend%
2012-13	5,862	100
2013-14	5,408	92.2552
2014-15	5,769	98.4135
2015-16	5,121	87.3593
2016-17	5,642	96.247

Graph 4.2(a) -Representing the Trend%



Interpretation: this above graph represents the trend of the total office & admin cost; in this we can see there is an increase and decrease, this shows that the expenses & other charges are keep on varying from year to year.

4.3 Cost Analysis of Selling & Distribution Overhead:

Table 4.3 – Representing the Selling & Distribution Overhead

PARTICULARS	2012-13	2013-14	2014-15	2015-16	2016-17
Advertisement charges	15,420	14,200	16,210	14,620	18,182
Commission	8,000	8,480	6,000	8,131	6,280
Packing charges	5,086	4,768	5,484	4,110	4,120
TOTAL	**28,506**	**27,448**	**27,694**	**26,867**	**28,582**

Analysis: This above table shows that there is more cost spent on the advertisement charges, the cost on it is being incurring more as in 2012-13 it was 15,420 and in 2016-17 the cost was 18,182. The total selling & distribution cost in the year 2016-17 was 28,582.

Graph 4.3 – Representing the various heads under Selling & Distribution Overhead

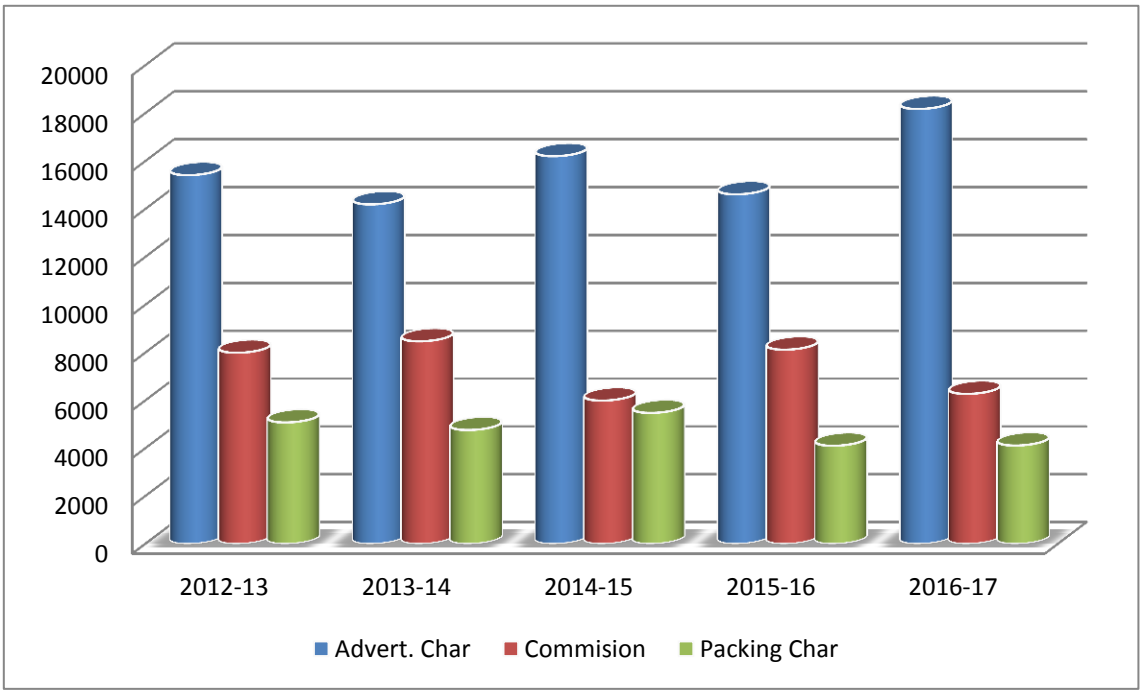
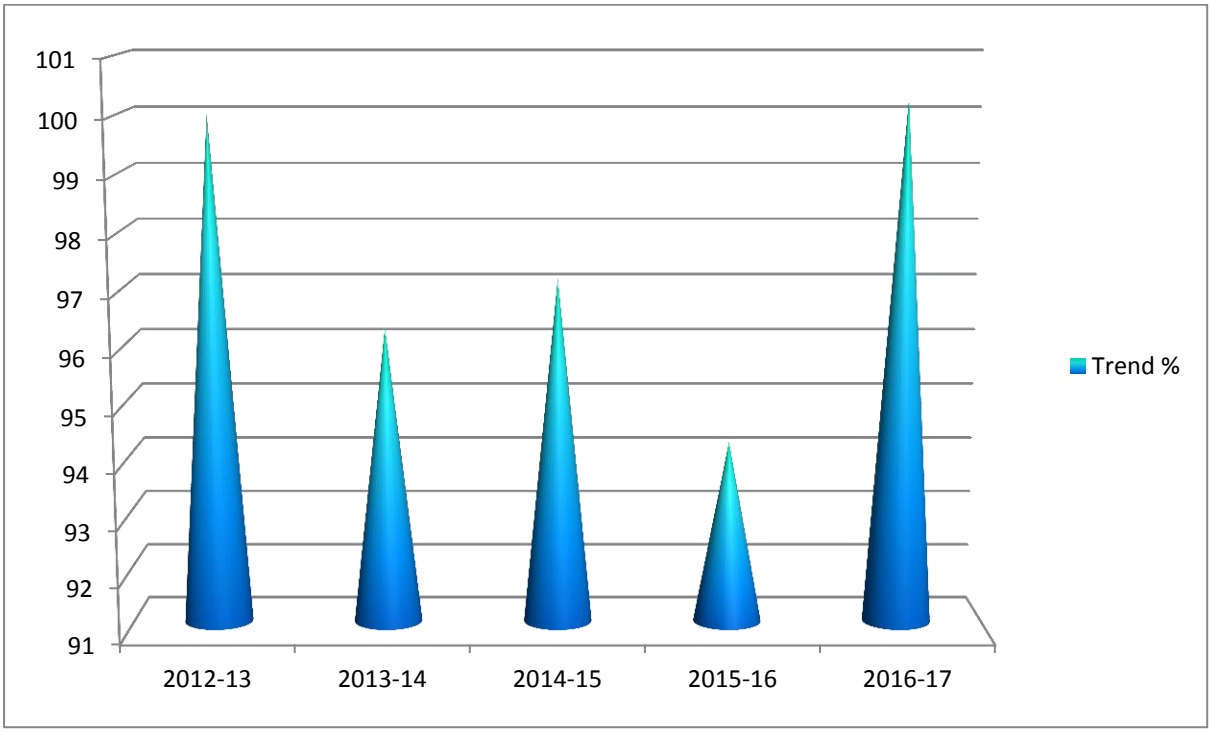


Table 4.3(a) – Computation of trend calculation:

Year	TC of Selling& Distribution	Trend%
2012-13	28,506	100
2013-14	27,448	96.28
2014-15	27,694	97.15
2015-16	26,867	94.25
2016-17	28,582	100.26

Graph 4.3(a) -Representing the Trend%



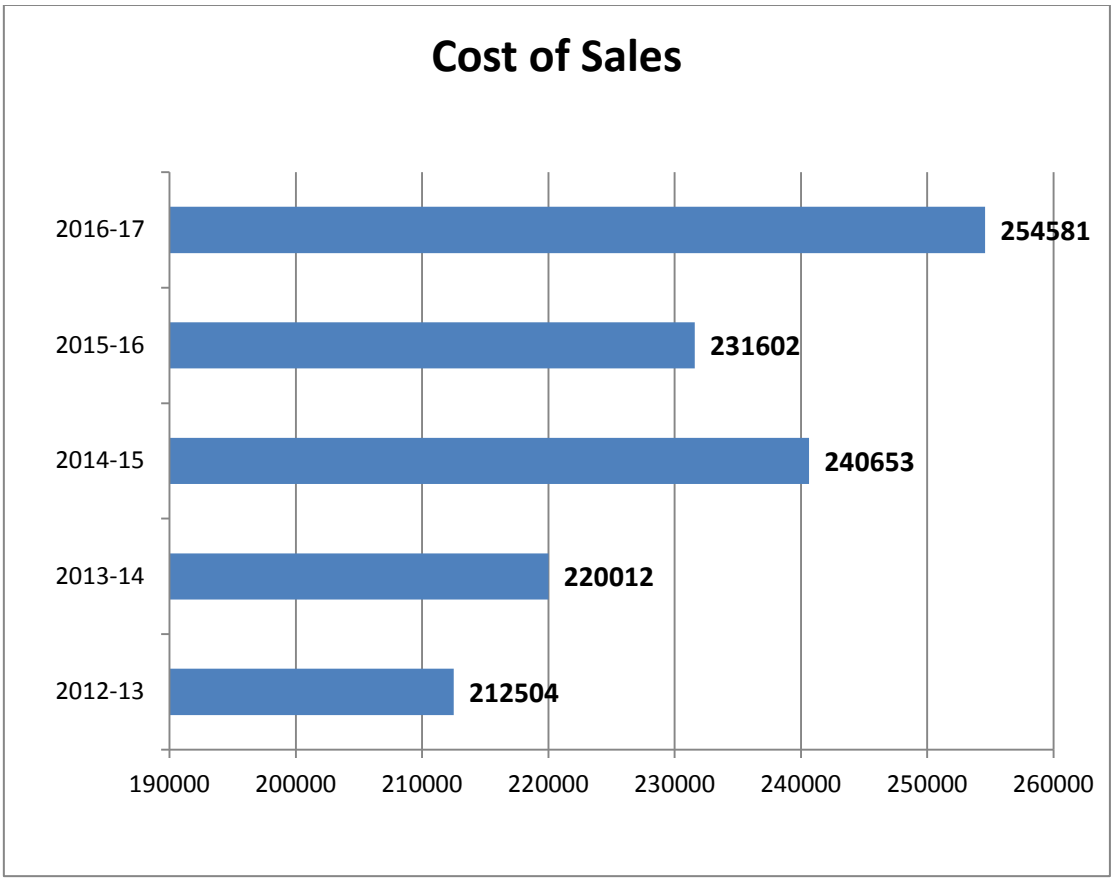
Interpretation: the above graph represents the trend % were in 2012-13 the total cost was high and later the cost cam down in the year 2013-16, but in 2016-17 the cost went up to as there was more cost spent on advertisement.

4.4 Final Cost structure of Volvo Group:

Table 4.4 – Representing the cost sheet

PARTICULARS	2012-13	2013-14	2014-15	2015-16	2016-17
Material cost	98,700	87,090	92,500	99,113	95,840
Direct expense	3,250	4,660	5,307	9,745	2,117
Direct wages	48,780	55,400	53,860	52,756	84,400
Manufacturing overheads	27,406	40,006	55,523	38,000	38,000
Administrative overheads	5,862	5,408	5,769	5,121	5,642
Selling overhead	28,506	27,448	27,694	26,867	28,582
Cost of Sales	**2,12,504**	**2,20,012**	**2,40,653**	**2,31,602**	**2,54,581**
(+) Finance charges	56,316	60,701	56,763	57,089	58,884
Total Cost	**2,68,820**	**2,80,713**	**2,97,416**	**2,88,691**	**3,13,465**

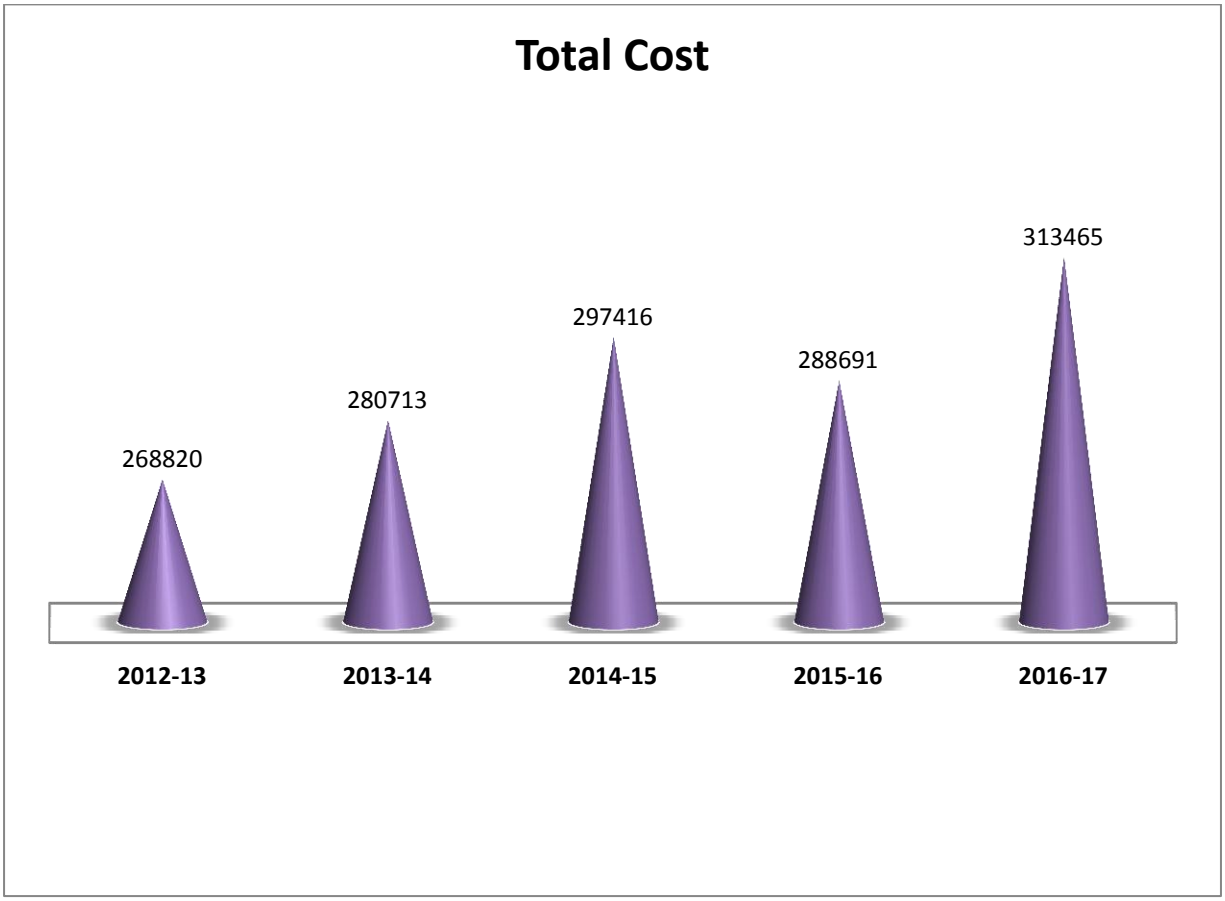
Graph 4.4.1 – Representing the Cost of Sales



Analysis: this above graph shows the cost of sales for the year 2012-13 was 2,12,504 ; in 2013-14 the cost was 2,22,0012 ; 2014-15 was 2,40,653; in 2015-16 it was 2,31,602 and in 2016-17 it costs to 2,54,581.

Interpretation: this graph representing the cost of sales is increasing, i.e. the cost of sales in the year 2012-13 was 2,12,504 and in the year 2016-17 was 2,54,581, this represents that the as the cost of sales has increased the production and the demand for the products in the company is increasing.

Graph 4.4.2 – Representing the Total Cost



Analysis: the above graph shows that the total cost of the company is 2,68,820 in 2012-13; 2,80,713 in 2013-14; 2,97,416 in 2014-15; 2,88,691 in 2015-16 and 3,13,465 in 2016-17.

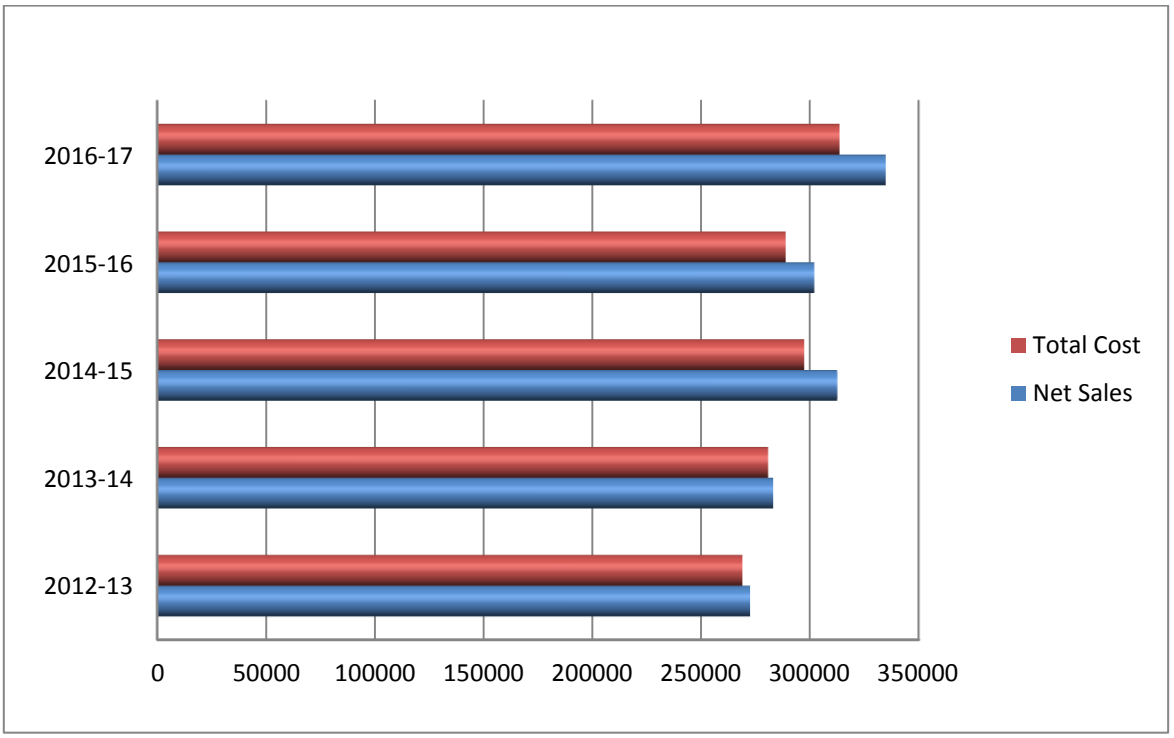
Interpretation: the graph represents that the total cost is being increasing from 2012-13 to 2016-17 by 2,68,820 to 3,13,465. This shows that there is increase in material purchased which leads to high in prime cost, more expenses on selling & distribution and office & admin costs which all leads to increase in the total cost of the company.

4.5 Calculation of Profit:

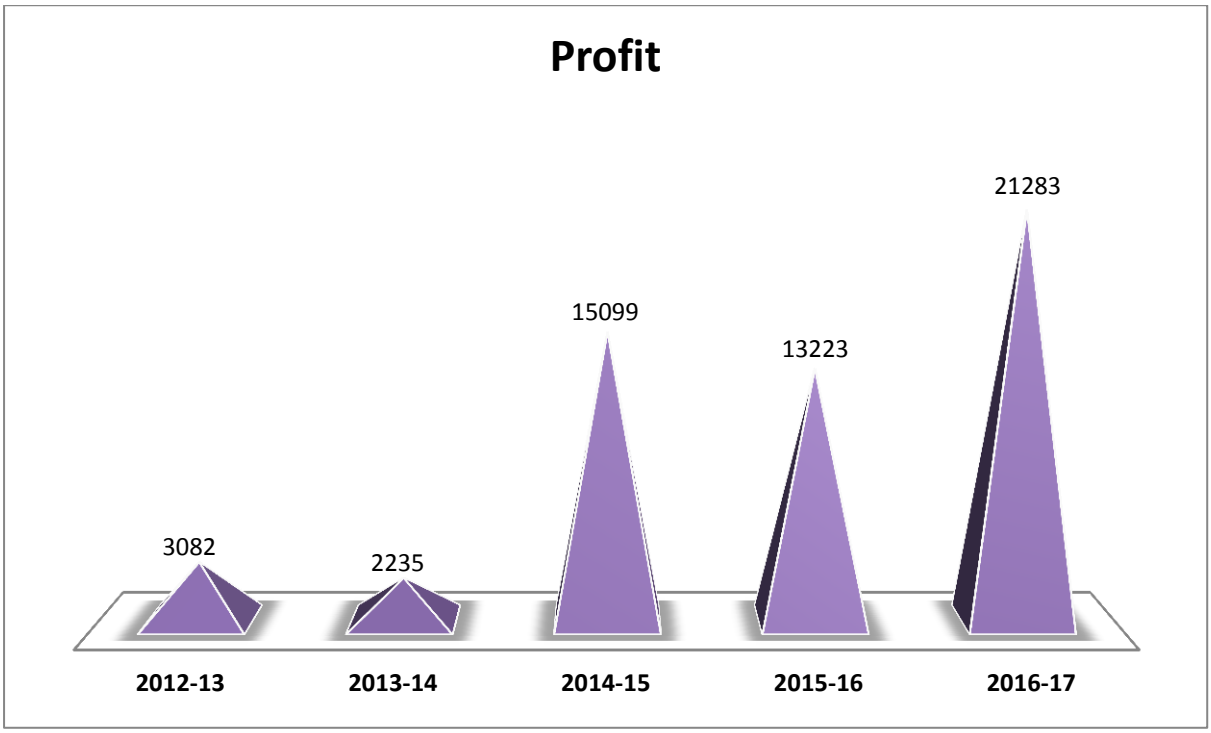
Table 4.5 – Showing computation of profit

PARTICULARS	2012-13	2013-14	2014-15	2015-16	2016-17
Net Sales	2,72,622	2,82,948	3,12,515	3,01,914	3,34,748
(-) Total cost	2,68,820	2,80,713	2,97,416	2,88,691	3,13,465
Profit	**3,802**	**2,235**	**15,099**	**13,223**	**21,283**

Graph 4.5.1 – Representing comparison of net sales & total cost



Graph 4.5.2 – Representing Profit



Analysis: the above table shows that the total net sales are high than the total costs which results in profit. The profit was 3,082 in 2012-13 ; in 2013-14 amounted to 2,235; in 2014-15 was 15,099; in 2015-16 was 13,223 and in 2016-17 it was 21,283.

Interpretation: this above graph represents the profit of the company, which shows there is a gradual increase in the profit of the company; that is even the total costs are less when compared to net sales which increases the profit. Hence this represents that the company us running profitably after all the deductions.

4.6 ABC Analysis:

ABC analysis means activity based costing; it is a stock order technique used to analyze and control the stock in the company.

The ABC analysis is divided into 3 different classes as A, B and C.

Volvo Construction Equipment can follow this tool of cost analysis for controlling their inventories as there are many machinery purchased at very cost and few at low cost; hence they can be divided into A,B and C classes.

- A- Most expensive item [these are the goods which annual consumption value is high; where the 70-80% of annual consumption are taken into account]

- B- Moderate expensive item [are known as the interclass items, with medium consumption value. It typically accounts for 50% of total inventory items]

- C- Less expensive item [these are the lowest consumption value goods, which accounts only to 25-30% of total inventory items]

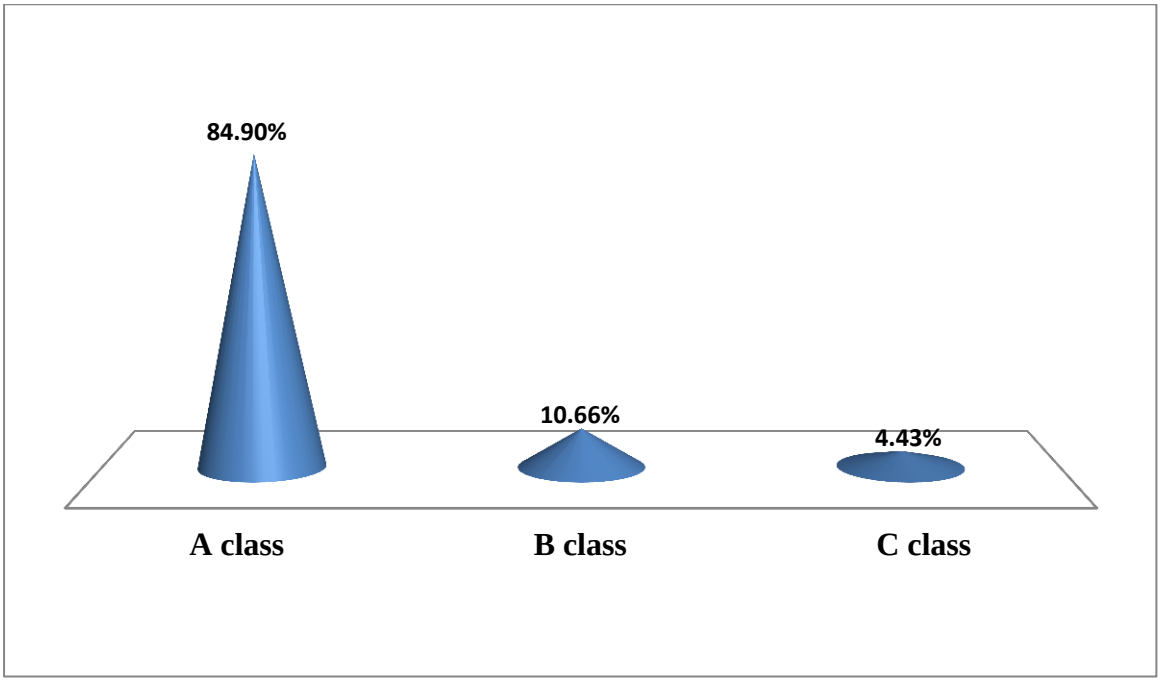
Table showing the % of division on classes based on purchase on machineries:

Classes	**Total % of division**
A	84.90
B	10.66
C	4.43

Table 4.6 – Showing the division of ABC analysis for 2017

Machineries	Cost	No. items	Total Cost	% of TC	Classes
Diesel engine	30,001	243	73,01,043	35.84	**A**
Radial Piston Motor	4,344	2,301	99,93,875	49.06	**A**
Ignition Box	7,800	25	1,97,450	0.97	**C**
Track roller	3,271	361	11,80,990	5.80	**B**
Hydraulic pump	12,450	18	2,20,516	1.08	**C**
Shock mount	9,523	104	9,91,387	4.87	**B**
Control valve	2,789	76	2,10,653	1.03	**C**
Engine Cooling fan	19,700	9	1,86,456	0.92	**C**
Harness instrument	8,177	11	87,590	0.43	**C**
			2,03,69,960		

Graph 4.6 – Representing the division of ABC analysis for 2017



Analysis: the above table shows different classes of inventories; in A class there is diesel engine and radial piston motor which approximately leads to 84% of annual consumption, were as B leads to 10.6% and C has the least % i.e. 4.43%.

Interpretation: the graph represents that there A class items has the highest annual consumption when compared to B class it has the moderate value of annual consumption; were the C class is the very low value.

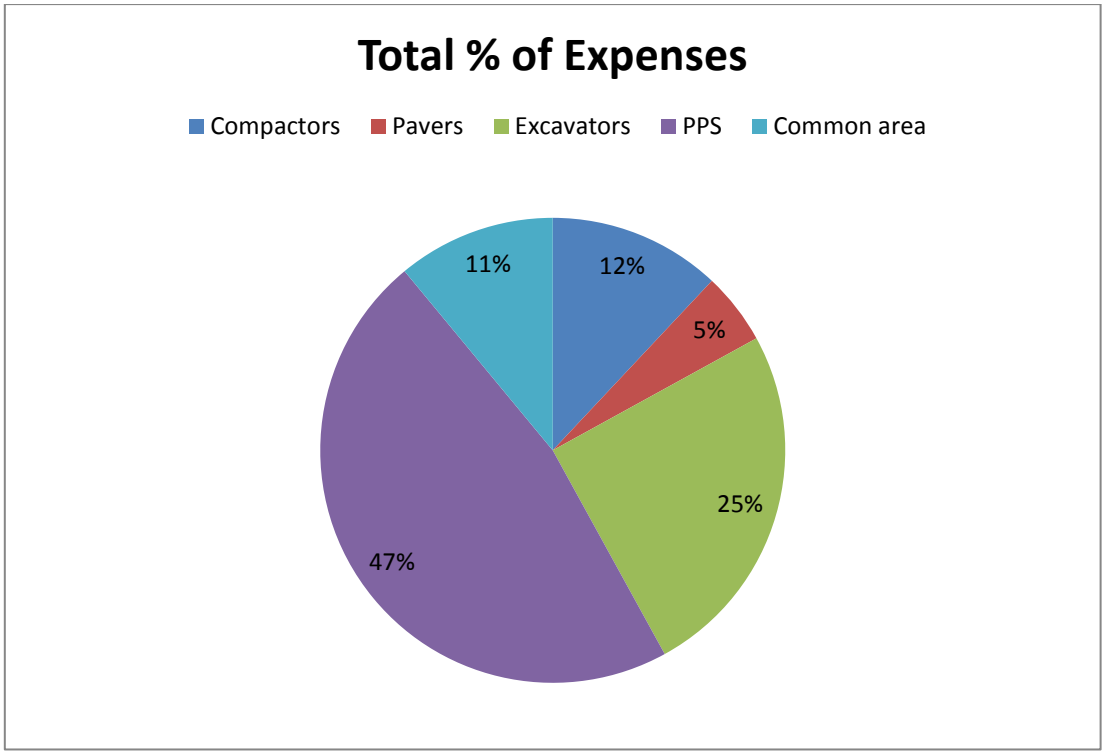
4.7 Analysis of Total Expenses of each segment in Volvo:

Table 4.7 – Showing % of expenses

Products / Process line	Expenses in amount (INR)	% of expenses
Compactor	13,37,288	12%
Pavers	5,57,204	5%
Excavators	27, 86,018	25%
Parts paints shop and touch-up paints shop	52,37,713	47%
Common area	12,25,848	11%
TOTAL EXPENSES	**1,11,44,070**	

Analysis: the above table shows that there are different expenses for the each product and process line in the company. The paint shop process line consumes the 47% of total expenses; and pavers assembly line consumes least expenses that is 5%.

Graph 4.7–Representing total % of expenses



Interpretation: the above graph represents that the pavers line consume the less expenses (5%), where the paint shop line consumes more cost(47%) when compared to other product line, so the company has to bring down the unnecessary cost spent on the paint shop line, which reduces the expenses and increases the profitability.

CHAPTER 5: FINDINGS , CONCLUSIONS & SUGGESTIONS

5.1 FINDINGS:

- It is found that Volvo Construction Equipment is one of the leading manufacturers of construction equipment.
- There is more demand in the market for Volvo products as it has unique and quality features for each different product.
- There are different expenses incurred for the each product and process line.
- It is found that the materials purchased for the construction purposes is increasing year by year as there an increase in the trend analysis of the prime cost.
- When compared to all the previous years it is found that net sales has been increased in 2016-17 which in turns helps to increase the profit.
- It is found that total cost is less than the net sales which results in profit; when compared to previous years there is an increase in the profit.
- By using ABC technique, the most important items which accounts to more annual consumption and less value inventories have been found out.

5.2 CONCLUSION:

Every organization has pre-determined objectives and goals; but these goals can be reached only by proper execution & planning and forecasting the plans economically.

Volvo construction equipment is giving quality service in large quantities; the organization needs to have a strong management to lead the organization successfully; the management plans, forecast and implements the plans are expressed in terms of cost analysis by analyzing the detailed cost structure on the firm.

Cost analysis helps the organization for the redemption of cost which leads to increase in profitability.

Therefore the company implements the effective cost analysis technique that is ABC analysis to differentiate the value of inventories which are incurring more cost to the firm. This helps to reduce the wastage of cost by optimal utilizing the available resources which in turn increases the profitability of the business.

5.3 SUGGESTIONS:

- To have a proper formulation of policies based on the objectives of the company.
- Trend analysis can be implemented.
- To improve data maintenance of each cost with respective to each different segments.
- To decrease the unnecessary cost on paint shop to avoid more expenses and which increases the profitability.
- Must concentrate on 'A' classes items as there is 70-80% of the annual consumption of purchases of machineries.

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ANNEXURES

- **Consolidated cash flow statements of Volvo Group in "SEK currency"**

PARTICULARS	2017	2016	2015	2014	2013
Operating activities					
Operating incomes	30,327	20,826	23,321	5,823	7,138
Depreciation tangible asset	6,456	6,339	6,443	6,716	6,221
Amortization intangible asset	3,246	3,431	3,344	3,534	5,055
Depreciation leasing vehicle	7,167	6,994	7,020	5,680	6,146
Other non-cash items	1,400	(431)	(452)	6.141	2,416
Total change in working capital	(4,704)	(13,893)	(9,149)	(14,103)	(10,765)
1. Change in account receivables	(7,171)	(4,043)	514	1,213	(4,919)
2. Change in customer – financingreceivables	(4,070)	1,062	(8,313)	(10,640)	(8,730)
3. Change in inventories	(7,537)	(1,568)	(2,324)	(1,622)	(3,263)
4. Change in trade payables	11,113	(2,923)	(1,098)	(799)	7,964
5. Change in working capital	2,960	(6,420)	2,073	(2,255)	(1,817)
Interest and similar items received	274	346	375	317	364
Interestand similar items paid	(1,602)	(1,584)	(1,683)	(1,846)	(2,437)
Other financial items	(206)	(253)	(252)	(221)	(225)

Income taxes paid	(4,758)	(4,219)	(3,110)	(3,304)	(2,823)
Cash-flow from operating activities	**37,599**	**17,559**	**25,858**	**8,737**	**11090**
Investments intangible asset	(5,734)	(6,643)	(6,561)	(7,093)	(8,281)
Investment in intangible asset	(2,006)	(2,882)	(2,257)	(1,541)	(3,922)
Investment in leasing vehicle	(11,494)	(10,817)	(10,529)	(10,115)	(8,262)
Disposals of fixed assets and leasing vehicle	5,392	9,035	6,020	5,038	3,403
Operating cash flow	**23,757**	**6,251**	**12,531**	**(4,973)**	**(5,972)**
Investments and disinvestment of shares, net	2,182	224	(1,984)	69	(14)
Acquired and divested operations, net	928	1,425	408	7398	932
Interest bearing receivables including marketable securities	1,586	2,531	3,552	(4,808)	510
Cash flow after net investments	**28,454**	**10,431**	**14,507**	**(2,314)**	**(4,544)**
Financial activities					
Change in loans, net	(8,996)	(2,245)	(13,247)	6,686	12,955
Dividend to AB Volvo's SH	(6,603)	(6,093)	(6,090)	(6,084)	(6,084)
Dividend to minority shareholder	(13)	(206)	-	-	(162)

Other	(31)	(9)	14	(57)	56
Change in cash and cash equivalents excluding translation difference	**12,811**	**1,878**	**(4,815)**	**(1,769)**	**2,221**
Translation difference on cash and cash equivalents	(667)	1,023	(378)	1,044	(460)
Change in cash and its equivalents	**12,144**	**2,901**	**(5,194)**	**(725)**	**1,761**
Cash and cash equivalents, beginning of year	**23,949**	**21,048**	**26,242**	**26,968**	**25,207**
Cash and cash equivalents, end of year	**36,092**	**23,949**	**21,048**	**26,242**	**26,968**

- **Income Statement of Volvo Group in "SEK" currency.**

PARTICULARS	2017	2016	2015	2014	2013
Net sales	**3,34,748**	**3,01,914**	**3,12,515**	**2,82,948**	**2,72,622**
Cost of goods sold	(2,54,581)	(2,31,602)	(2,40,653)	(2,20,012)	(2,12,504)
Gross income	**80,167**	**70,312**	**71,862**	**62,937**	**60,118**
Research & development expenses	(16,098)	(14,631)	(15,368)	(16,656)	(15,124)
Selling expenses	(28,582)	(26,861)	(27,694)	(27,448)	(28,506)
Administrative expenses	(5,642)	(5,121)	(5,769)	(5,408)	(5,862)
Other operating income & expenses	(1,061)	(3,135)	(4,179)	(7,697)	(3,554)
Income from investments	1,407	156	(143)	46	96
Incomes / loss from other investments	135	112	4,609	50	(30)
Operating income	**30,327**	**20,826**	**23,318**	**5,824**	**7,138**
Interest income and similar credits	164	240	257	328	381
Interest expenses and similar charges	(1,852)	(1,847)	(2,366)	(1,994)	(2,810)
Other financial income and expenses	(385)	11	(792)	931	11
Income after fin. items	**28,254**	**19,230**	**20,418**	**5,089**	**4,721**

Income taxes	(6,971)	(6,008)	(5,320)	(2,854)	(919)
Income for the period	**21,283**	**13,223**	**15,099**	**2,235**	**3,802**
Attributable to:					
Equity holders to the parent company	20,981	13,147	15,058	2,099	3,583
Minority interest	302	75	41	136	219
	21,283	**13,223**	**15,099**	**2,235**	**3,802**
Basic earnings per share, SEK	10.33	6.47	7.42	1.03	1.77
Diluted earnings per share, SEK	10.32	6.47	7.41	1.03	1.76
Other comprehensive incomes:					
Income for period	**21,283**	**13,223**	**15,099**	**2,235**	**3,802**
Re -measurements of defined benefit pension plan	(827)	(304)	2,783	(2,833)	3,904
Items reclassified subsequently to income statement:	-	-	-	-	-
Exchange differences on translation of foreign operations	(2,546)	5,585	(2,481)	5,998	(1,634)
Share of OCI related to joint ventures & comp.	25	(97)	24	198	(135)

Accumulated translation difference reversed to income	(56)	(48)	45	33	37
Available for sale investments	(10)	(57)	(3,837)	3,067	470
Change in cash flow hedge reserve	(20)	68	(32)	24	9
Other comprehensive income, net of income taxes	**(3,434)**	**5,147**	**(3,498)**	**6,487**	**2,651**
Total comprehensive income for the period	**17,849**	**18,370**	**11,601**	**8,722**	**6,453**
Attributable to:					
Equity holders of the parent company	17,601	18,249	11,527	8,334	6,196
Minority Interest	248	121	74	388	257
	17,849	**18,370**	**11,601**	**8,722**	**6,453**

- **Balance sheet of Volvo Group in 'SEK' currency**

Balance sheet – Equities and liabilities

PARTICULARS	2017	2016	2015	2014	2013
Equities and Liabilities					
Equity attributable to the equity holder of the parent company	1,07,069	96,061	83,810	78,325	76,032
Minority interest	1,941	1,703	1,801	1,723	1,333
Total equity	**109,011**	**97,764**	**85,610**	**80,048**	**77,365**
Non-current provision:					
1.Provision for post - employment benefits	14,476	14,669	13,673	16,683	12,322
2.Provision for deferred taxes	5,353	5,270	3,495	2,796	2,406
3.Other provisions	9,318	9,804	9,536	12,740	6,190
Total non-current provision	**29,147**	**29,744**	**26,704**	**32,219**	**20,918**
Non-current liability:					
1. Bond loans	48,962	60,653	47,776	68,877	46,585
2. Other loans	24,942	23,898	27,500	39,154	36,864
3.Internal funding	-	-	-	-	-
4.Other liabilities	22,309	20,322	16,538	13,732	11,477
Total non-current liabilities	**96,213**	**104,873**	**91,814**	**1,21,763**	**94,926**
Current provisions	**10,806**	**11,333**	**14,176**	**12,473**	**11,304**
Current liabilities:					

1.Loans	53,771	56,497	57,331	39,953	51,552
2.Internal funding	-	-	-	-	-
3.Non- interest-bearing liabilities for sale	0	148	573	130	332
4. Interest bearing liabilities for sale	-	-	-	-	18
5.Trade payables	65,346	55,264	55,648	56,647	53,901
6.Tax liabilities	1,699	685	1,322	2,693	1,120
7.Other liabilities	46,501	42,608	40,986	36,970	33,939
Total current liabilities	**1,67,317**	**1,55,202**	**1,55,860**	**1,36,393**	**1,40,316**
Total equity and liabilities	**4,12,494**	**3,98,916**	**3,74,165**	**3,82896**	**3,44,829**

- **Balance sheet – Asset**

PARTICULARS	2017	2016	2015	2014	2013
Asset					
Non-current asset					
Intangible asset	35,893	37,916	36,416	37,115	36,588
Tangible asset:					
1. Property, plant and equipment	53,317	55,841	53,335	54,915	51,906

2. Investment property	31	34	283	266	327
3.Asset under operating leases	37,166	34,693	32,531	31,218	25,672
Financial Assets:					
1.Investments in joint ventures and associated companies	10,525	11,643	11,148	4,821	4,377
2.Other shares & participations	699	776	902	5,017	1,950
3. Non - current customer financing receivables	57,173	52,827	50,962	51,331	43,792
4. Prepaid pensions	252	79	34	15,831	13,166
5.Non-current interest bearing receivables	2,335	1,258	1,150	126	22
6. Other non-current receivables	4,281	4,148	3,268	1,441	480
Deferred tax assets	11,782	14,399	13,450	3,531	2,937
Total non- current assets	**2,13,455**	**2,18,615**	**2,03,478**	**2,05,594**	**1,81,217**
Current assets:					
Inventories	52,701	48,287	44,390	45,533	41,153
Current receivables					

1. Customer financing receivables	52,205	52,994	51,621	47,836	40,069
2.Tax assets	1,567	1,359	2,161	3,414	1,749
3.Interest bearing receivables	1,166	1,135	1,788	1,113	909
4.Internal funding	-	-	-	-	-
5. Account receivable	40,774	34,419	29,101	30,895	29,415
6.Other receivables	14,305	16,410	13,920	14,669	12,654
Non- interest bearing assets held for sale	51	525	3,314	288	8,102
Interest bearing asset for sale	-	-	-	-	2
Marketable securities	178	1,223	3,344	7,312	2,591
Cash & cash equivalents	36,092	23,949	21,048	26,424	26,968
Total current assets	**1,99,039**	**1,80,301**	**1,70,687**	**1,77,302**	**1,63,612**
Total asset	**4,12,494**	**3,98,916**	**3,74,165**	**3,82,896**	**3,44,829**

ACHARYA INSTITUE OF TECHNOLOGY

DEPARTMENT OF MBA

PROJECT WORK WEEKLY REPORT

Name of the Student: RAKSHITHA.S

Internal guide : MALLIKA.B.K

USN No : 1AZ16MBA52

Specialization : Finance & Human Resource

Title of the Project : A study on Cost Analysis

Company Name : Volvo Construction Equipment

External Guide : Priya Prakash

Week	Work Undertaken	External Guide Signature	Internal Guide Signature
15-01-18 to 19-01-18	Introduction about Volvo company and its operations		
22-01-18 to 26-01-18	Learning about different products in Volvo		
29-01-18 to 02-02-18	Collecting information about the growth of the company		
05-02-18 to 09-02-18	Analysis of market position of the company		

VOLVO GROUP INDIA PVT. LTD. VOLVO BENGALURU

12-02-18 to 16-02-18	Research Problem identification		
19-02-20 to 23-02-18	Preparation of research instrument for data collection		
26-02-18 to 02-03-18	Theoretical background of the study		
05-03-18 to 09-03-18	Data collection and analysis		
12-03-18 to 16-03-18	Interpretation of data gathered		
19-03-18 to 26-03-18	Final report presentation and submission		

Company Seal

VOLVO GROUP INDIA PVT. LTD. VOLVO BENGALURU

21/8/18

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