

**Improving Performance of Store Management:
A Case Study of Dhaka Electric Supply
Company Ltd. (DESCO)**

**A Dissertation by
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Dedicated to

*My Loving Parents who supported me all the
way*

*My Wife whose constant dedication and love
enlightened me*

*My Supervisor whose guidance was a source
of inspiration*

*All of my friends and colleagues who stood
beside me with great commitment*

Declaration

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ABSTRACT

Creation of Dhaka Electric Supply Company is a part of the reforms being initiated by the Bangladesh Government to increase efficiency in the area of generation, transmission and distribution. After its commencement on September 24, 1998 DESCO proved successful and therefore in the subsequent years of successful operation and performance, the operational area of DESCO was expanded and the total consumer growth increased. Being the first public limited company in the energy sector, DESCO is now considered as a profitable company which is managed efficiently and economically with optimum cost and manpower. Consequently DESCO Management has to face lots of challenges and threats as well as opportunities to improve its operational performance.

DESCO's stores and spares stand almost two-fifth of the shareholder's equity. Again in recent days, physical storage and distribution has crucial roles to play for the organisation. The role of the management of stores is concerned with improving both the efficiency and the effectiveness of the stores function by seeking to eliminate waste from activities that add cost to the supply chain, while maximising those areas that add value. Before starting of this thesis, the researcher assumed that Store Management of DESCO has no specific long term vision and goals in its stores. In addition, the researcher also assumed that existing performance of Store Management is not that much satisfactory in terms of efficiency and effectiveness in comparison with the standards of similar industry. In general, this study is expected to helpful to the policy makers of DESCO to improving the existing performance of Store Management.

The objectives of the study were achieved through three approaches; the first one was a valid questionnaire that was obtained from respondents' of DESCO. The second one is achieved through studying some practical cases, experienced by Store Management overtime. The third one is achieved through key informant interviews of store related officers and staffs of DESCO. A questionnaire was prepared to know the general perception and attitude regarding Store Management, to determine its objectives and scope, to evaluate the strategic factors affecting the choice of Store Management, to appraise and evaluate the role and effects of different stores, to assess Inventory Management, to examine and analyse security in different stores, to examine health and safety and legal issues involved in Store Management and to evaluate the use of information and Communication Technology at Central Store.

After getting the response from the respondents' from questionnaire, practical experience and key informant interview, the study recommends some of the key areas for improvement of store management. The researcher recommends a number of possible ways in certain improving areas to DESCO Management like organization and management, personnel management, store management strategy, stock rotation and control, safety measures, security, warehouse premises, material handling equipment, dispatch, ICT, disposal of goods, inspection etc. The researcher believes that if DESCO Management considers and implements those recommendations in store management then existing performance of store management would certainly improve.

Store Management is now considered as an inseparable part of all business. If effectively maintained and organised, Store Management of DESCO could keep safe custody of materials, their receipts, issues, and accounting with the objective of efficiently and economically providing the right goods at the right time whenever required in the right condition to all user departments.

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CHAPTER-1

INTRODUCTION

1.1 Introduction

Dhaka Electric Supply Company Ltd. (DESCO) was created as a distribution company in November 1996 under the Companies Act 1994 as a Public Limited Company with an authorised capital of Tk.5 billion. However, the operational activities of DESCO at the field level commenced on September 24, 1998 with consumer strength of 71,161 and a load demand of 90 MW. In the subsequent years of successful operation and performance, the operational area of DESCO was expanded and the total consumer growth increased to 4,49,063 as of June 30, 2011 with a maximum load demand of 640 MW.

Being the first public limited company in the energy sector, DESCO is now considered as a profitable company which is managed efficiently and economically with optimum cost and manpower. DESCO employees under its regular payroll generally carry out the desk jobs and supervisory activities while the field operational activities have been outsourced. The major technical activities like substation and switching station scheduled maintenance, trouble shooting and breakdown maintenance, overhead line maintenance, trouble shooting of the customer service complain, line and equipment maintenance have been outsourced. On the other hand, commercial support activities like taking meter reading, distribution of monthly electricity bill, service disconnection of the defaulter consumer, new connection meter installation, old or unserviceable meter change etc. are also outsourced.

With the expansion of operational area and fast increase in consumer growth and system load, DESCO recognized its activities into 12 (twelve) Sales & Distribution (S&D) Divisions. This is aimed to ensure effective control and supervision of the field operation in DESCO premises.

With a shareholder's equity of 991.9 crore for the year ended June 30, 2011, DESCO's stores and spares stands 403 crore which is a major concern for DESCO Management. In recent days, physical storage and distribution has crucial roles to play. Its essential objectives are to be the supply and delivery of the right goods, to the right place at the right time in accordance with customer/user requirements and within an acceptable cost framework for the supplier in order to reduce lead times, provide agility and reduce unnecessary costs. The role of the management of stores is concerned with improving both the efficiency and the effectiveness of the stores function by seeking to eliminate waste from activities that add cost to the supply chain, while maximising those areas that add value.

Storage should be planned, organised and operated in such a way that the timeframe over which stock is held should be as short as possible consistent with operational requirements. Again, Distribution is the efficient movement of finished product from the end of the production line, and in some cases movement of raw materials from the source of supply to the beginning of the production line. These activities include freight transportation, warehousing, materials handling, packaging, inventory control, plant and warehouse site selection, order processing, marketing, forecasting, customer service etc.

Furthermore, the ability to identify the true costs of Store Management is crucial. Without it, organisations are unable to identify the potential for cost trade-offs that may exist within the system. A

trade-off occurs where an increase in one area is more than matched by a cost reduction in other areas. This will lead to an improvement in the overall situation. The trade-off concept has proved difficult to implement in practice. To work effectively, organisations need to look outside rigid organisational structures and look at what is best for the organisation overall and not for individual departments.

Considering these themes, new concepts and challenging business environment, Store Management of DESCO has a lot of potentials for improvement. Bulk amount of international and local purchase of DESCO are being kept at different stores of DESCO. As the nature of the business is electricity distribution, different types of cables and accessories, pole and pole fitting materials, distribution transformers, meter and meter accessories, substation equipment and spares, different types of tools and spares are being stored at different stores of DESCO. Efficient and effective performance of Store Management undoubtedly add value to the procurement function, save space and stock costs by stock reduction and eventually save costs for the organisation. Thus DESCO Management need to improve in the areas such as goods handling, suitability of goods for unit loads, effective utilisation of the buildings, accessibility of stores and spares, stock availability, order lead time, expertise of staffs, security measures, personal safety, information and communication technology and other things at the Store Management.

1.2 Objectives

The study intends to identify non-performing areas and limitations of existing operational performance of DESCO's Store Management. After studying key performance indicators in terms of costs (for example staff payments, building and site, equipment and other resources and maintenance etc.) and efficiency and effectiveness (for example stock availability, lead time, percentage of orders completed on time, percentage completeness of order fill, storage density and accessibility) the study intends to find out possible ways in improving performance of Store Management of DESCO.

1.3 Hypothesis

Performance measurement and monitoring are important to the effective management of any organisation. Measurements provide information at both strategic and operational level.

Hypothesis 1: At strategic level, measurements relate to long-term planning and direction. The measurement of key criteria evidences how an operation is performing against anticipated goals and may highlight areas that require review or additional investment. In this case, it is assumed that Store Management of DESCO has no specific long term vision and goals.

Hypothesis 2: At the operational level, measurement has more to do with the effectiveness and efficiency of the operation and how it is reaching industry standards. Efficiency can be defined as the relationship between inputs and outputs achieved. The fewer the inputs (both goods and services) used by organisation to achieve a given output, the more efficient the organisation. Again, effectiveness is the degree to which an objective or target is met. In this

connection, it is assumed that existing performance of Store Management is not that much satisfactory in terms of efficiency and effectiveness in comparison with the standards of similar industry.

1.4 Justification

One of the major reasons for undertaken this research work is the fact that no specific study has yet been conducted in regard to measuring the existing performance and finding out the possible ways for improving the existing performance of Store Management of DESCO.

A common consent by the DESCO staffs is that Store Management doesn't add any value to wealth maximisation of DESCO rather it is considered as costs to the DESCO Management. At times, top management of DESCO are irritated with the performance of Store Management and conducts internal audit to find out problems. But in reality, performance of the Store Management deteriorates overtime.

In general, this study is expected to helpful to the policy makers of DESCO for improving the existing performance of Store Management.

1.5 Methodology

The study intends to use questionnaire and interviews as methods and procedures for collecting data and information. It is quite understandable that officers and staffs who are direct and indirect involvement of procurement and store management will be filled up the questionnaire. In addition, top management will be interviewed for suggestions and improvements.

The questionnaire will cover issues such as staff management (in terms of payment, expertise, deployment and other issues), management of stock (obsolete and redundant stock, stock proliferation etc), security concerns (vehicle security, warehouse security, personal security etc.), storage system, warehouse design and layout, Information and Communication Technology of Store Management and some other related issues. Pretesting of questionnaire will be done to get a polished Questionnaire with the feedback of the practitioners. General ideas of the research objective will be exchanged with the respondents before requesting for filling the questionnaire. After the exchange of general idea, the practitioner will be asked to fill the questionnaire.

Eventually, a written report will be prepared as per instruction given from the Institute of Governance Studies, BRAC University under the guidance of Supervisor.

1.6 Limitations of the Research

Getting things done must be the indicator of competency and nothing happened smoothly in any process of making new initiatives. This research might be an experience of encountering challenges

and resistances for unknown fear. All the relevant expenditure for preparing the questionnaire, for conducting key informant interviews, for writing up the research paper was borne by the research. However, a fixed sum of money will be reimbursed by the BRAC University later after the submission of the research paper. Besides, some of the respondents did not give the required time in filling out the questionnaire due to their preoccupation. However, time for completion the research may hinder quality of research to some extent.

1.8 Chapter Outline

The whole research work is presented in six different chapters.

The first chapter is the **introduction** chapter; which gives an outline of the general background of DESCO and its Store Management. This chapter also explains the scope of research work, objective, hypothesis, methodologies to be followed with the probable limitations.

The second chapter is the **organisational orientation** chapter; which gives background, management, organisational structure and its mission and vision.

The third chapter is the **research methodology** chapter; where an elaboration of the design of the research work is given including the selection of interviewees, framework of the questionnaire and methods of valid interpretation through triangulation.

The fourth chapter is the **literature review** chapter; which give a generalised concept of store management basing on which this research work intends to be carried out.

The fifth chapter is the **analysis of the results** chapter; which encompasses the interpretation of the data in the appropriate format using the analytical methods. This chapter also provides the results regarding existing performance of store management and finding our the possible ways for improvement of the existing performance.

The sixth and final chapter is the **conclusion and recommendations** chapter; which gives guidelines to improve the existing performance of store management. In addition, this chapter also gives the limitations, assumptions and scope of further study in this topic.

CHAPTER-2

ORGANISATIONAL ORIENTATION

2.1 History

The electricity supply industry in South Asia started with the commissioning of the first power station in the 1890s. Although a number of small stations were constructed over the next 20 years, these stations were isolated, catering to small distribution networks serving the major urban centers.

The first effort to structure a legal framework for the industry came in 1910 with the enactment of the Indian Electricity Act, 1910. This Act sought to regulate the business of industry still based on the old concept of isolated privately owned distribution networks fed by small generation stations & essentially defined the rights & obligations of the supplier and the consumer.

In 1947, at the time of independence of India & Pakistan, the installed generating capacity in the then East Pakistan was only 21 MW. Electricity was available to only a small elite in the district and sub-divisional headquarters. The distribution networks in these cities were isolated and were fed by coal fired steam power plants or diesel generation. In an effort to expeditiously augment generation capacity to feed a development economy, the then Government of Pakistan issued an ordinance in 1959 creating the East Pakistan Water and Power Development Authority (EWAPDA). The Ordinance essentially provided for the Government's takeover of all generation, Transmission and distribution facilities from the private sector, thereby creating a total Government monopoly in the sector. During 1960 to 1970 the generation capacity of the then East Pakistan rose from 88MW to 475 MW, supplied largely by natural gas and oil fired, steam power and hydro plants. The networks of Dhaka and Chittagong and then been interconnected albeit with weak 132 KV links.

Shortly after the creation of an independent Bangladesh, in 1972, the first Government of Bangladesh, in an effort to speed up the investment in the sector issued an Ordinance creating the Bangladesh Power Development Board (BPDB) as the successor organization of the power side of EWAPDA. The Ordinance recognized the divergence of energy related issues in development. During 1972 to 1995, BPDB has increased the generating capacity in the country to 2818 MW, and the length of its 230 and 132 KV transmission networks to 419 KM and 2469 KM. For the first time in December 1982, the eastern and western halves of the country were electrically connected through the commissioning of double circuit 230 KV transmission line across the Jamuna river energized at 132 KV between Ishurdi and Tongi called the first East-West Interconnector. Generation sources were diversified to include a 230 MW hydropower station at Kaptai on the Karnaphuli river and natural gas and imported fuel based, open and combined cycle power plants at different locations of Eastern and Western part of the country. The distribution networks of all major towns and cities had been linked through 230 KV and 132 KV inter-ties.

In order to intensify the pace of rural electrification, the Government issued an ordinance in 1977 establishing the Rural Electrification Board (REB), a semi-autonomous agency charged with the responsibility of planning, developing, financing and construction of rural distribution networks, promoting the establishment of Rural Electric Cooperatives (Palli Bidyut Samities), handing over the constructed rural networks to them, assisting the PBSs to operate and maintain the rural networks and

monitoring their financial performance. The REB has so far constructed over 46,000 Km of distribution lines and provided over 950,000 consumers connections in the rural areas (As on June, 95).

In 1990, another ordinance was issued, which was subsequently enacted as an Act transferring the 132 kv, 33 kv Transmission and distribution system in the Greater Dhaka Area including the Metropolitan City to a newly created Government agency called the Dhaka Electric supply Authority (DESA). This was done to lessen the administrative burden on BPDB,s management by relieving it of the burden of managing about 50 percent of the energy distribution in the entire country.

2.2 The Reform Process

Although several ordinances amending the Electricity Act, 1910 had been promulgated, none of them addressed issues involving the commercial nature of the sector, which continued to be treated as an extension of the Government providing social goods for the people. From 1986 onwards, the commercial performance of the BPDB deteriorated and during 1991, BPDB,s average gross systems loss was about 42 percent and accounts receivables in excess of 6.5 months of billing. This performance was not found reasonable to the covenants agreed by the Government and BPDB with the Asian Development Bank and the World Bank. These two institutions along with the Overseas Economic Co-operation Fund, Japan, Overseas Development Administration, U. K., Kredltanstalt fur Wiederaufbau, Germany and the United States Agency for International Development, decided not to provide any financial assistance to the sector until BPDB and DESA improved their performance to agreed levels. Consequently it considered restructuring the Power sector as a sustainable long-term solution to its problems.

With the economy performing very well during 1992-95, the demand for electricity grew substantially. Constrained by the paucity of its resources, the Government decided to allow private sector participation in the power sector. However, it was quickly realized that private capital, whether domestic or foreign, would not come into a sector, which was not financially viable and was not technically, organizationally and legally structured in a way conducive to attract it. Faced with a grim possibility of serious electricity shortages during the next few years and to enable the sector to be financially self-sustaining and also attract private capital, the cabinet approved in principle, the inter-ministerial committee report named "Power Sector Reforms in Bangladesh (PSRB)", in September 1994.

In the meanwhile, the performance of BPDB and DESA have slowly but steadily improved, although they are by no means near international levels of performance. The Dhaka area is the

largest single distribution territory consuming about 50 percent of the total electricity sold in Bangladesh. DESA, which is the distribution agency for the Dhaka area has a poor performance record with respect to system losses and accounts receivables. Although the performance has improved considerable since 1992 on account of intensive monitoring, there is a limit to the gains that can be made and it is felt that further progress can be achieved on a sustainable basis only if there is a change in the business environment, both external and internal to the organization, which will enable introduction of more sophisticated control and management systems, and also organizational accountability.

The organizational arrangements including management structure, employee compensation, delegation of authority, conduct, discipline and appeal rules and promotion policies are based on the civil service rules and arrangements which were not well suited to the functioning of a commercially oriented sector such as the power sector. It is therefore necessary to create new organization with its own rules and regulation that would be more suited to the new business environment that is now being created in the power sector.

Thus Creation of Dhaka Electric Supply Company is a part of the reforms being initiated by the Government. In the process of on going Power Sector Reforms by way of unbundling the power sector and increasing efficiency in the area of generation, transmission and distribution, Dhaka Electric Supply Co. Ltd. (DESCO) was created as a distribution company in November 1996 under the Companies Act 1994 as a Public Limited Company with an Authorized Capital of Tk.5 billion.

2.3 Activities of DESCO

DESCO was constituted to provide uninterrupted & stable power supply, better consumer service, improve system loss & Collection Import Ratio and accordingly DESCO starting its operational activity since September 24, 1998 by taking over of Mirpur area from DESA. Following are the initial activity of DESCO which includes:

- Operation & Maintenance of Sub-Stations & Lines;
- Commercial functions i.e. billing, consumer accounting, disconnection & re-connection of consumers, testing & installation of consumer meters etc.; and
- Planning, Design and installation of Sub-stations & lines etc.

2.4 Service territory of DESCO

Service territory of DESCO is as follows:

- **1st Phase:** Mirpur area bounded by Rokeya Sarani and low lying area in between Mirpur and Cantonment in the East, Agargaon road in the South, Mirpur Road and Turag river in the West and low lying areas in the North. The proposed area is shown in the enclosed map. The area covered under the 151 phase was taken over by DESCO on September 24, 1998 from DESA.
- **2nd Phase:** Gulshan Circle including Mirpur Area bounded by Balu River in the east, Turag River in the west and Turag and Balu River in the North and Mirpur Road, Agargaon Road, Rokeya Sarani, Progoti Sarani, New Airport Road, Maymenshing Road, Mohakhali Jeel, Rampura Jheel connected with Balu River in the South (Map enclosed). The additional area covered under the 2nd phase was taken over by DESCO on April 09, 2003 from DESA.

2.5 Vision & Mission

2.5.1 Vision: To be a role-model electric supply company in the region using most dependable technologies and be a development partner in the continuous welfare of the society.

2.5.2 Mission: Service to the utmost satisfaction of consumers through reliable and uninterrupted power supply and provide value for money. Provide congenial working environment for employees.

2.5.3 Corporate Philosophy: Service excellence with integrity and corporate social responsibility.

2.5.4 Focusing Efforts: Its focusing efforts are on delivery of quality service in the territories of DESCO area with the aim to add increased value to shareholders' investment and highest possible benefits to the consumers. Its strategic priorities are to have sustained growth, broaden and improve service to its consumers.

2.6 Growth of the Company

Starting from a consumer base of 71,000 with load demand of 90 MW in 1998, the Company has grown to cater about 460,000 consumers as of December 2011. The shareholders equity increased from Tk.4,470 million to Tk.7,320 million, recording a growth of 64%.

2.7 Management

Under the guidance of a nine member Board of Directors, the company is run by a management team headed by the Managing Director, with a view to run the Company efficiently and economically with optimum overhead cost and manpower. DESCO employees under its regular payroll generally carry out the desk jobs and supervisory activities while the field operational activities have been outsourced. With the expansion of operational area and fast increase in consumer growth and system load, DESCO reorganized its activities into 12 (twelve) Sales & Distribution (S&D) Divisions.

Table-2.1: Statistics of consumers in regard to personnel

Name of S&D Divisions	Number of consumers	Number of staffs (Permanent)
Head Office (including different functional departments, GM Offices and Zonal Offices)	-	191
Store	-	19
Testing & Repair	-	10
Prepaid Meter Unit	-	47
Bashundhara Grid	-	24
Utrara Grid	-	14
Divisions that don't handle consumers directly	-	305
Agargaon	28,838	53
Monipur	34,413	49
Shah Ali	25,950	49
Rupnagar	34,300	55
Pallabi	29,870	54
Kafrul	48,612	65
Mirpur Zone	201,983	325
Gulshan	36,995	115
Baridhara	62,686	108
Gulshan Zone	99,681	223
Uttara	60,394	107
Dakshinkhan (including Special Zone)	46,181	88
Tongi (East)	24,108	70
Tongi (West)	27,539	63
Mirpur Zone	158,222	299
DESCO (Total)	459,886	1179

(Data updated upto November, 2011)

Table-2.2: Commercial Highlights

Energy Import (GWH)	3150
Energy Sales (GWH)	2995
System Loss (%)	8.69
Collection Ratio (%)	98
Collection Import Ratio (%)	85
Receivable/Sales (%)	25

(Data updated upto December, 2011)

The major technical activities like substation and switching station scheduled maintenance, trouble shooting & breakdown maintenance, overhead line maintenance, trouble shooting of the customer service complain, line & equipment maintenance have been outsourced. On the other hand, commercial support activities like taking meter reading, distribution of monthly electricity bill, service disconnection of the defaulter consumer, customers house wiring inspection, new connection meter installation, old or unserviceable meter change etc. are also outsourced, including other logistic support services like security service, cleaning service and transport. To this end, DESCO engaged several experienced contractors through competitive tendering process. With the proper maintenance of the distribution system, service complaints from consumers have reduced significantly. To achieve greater consumer satisfaction, the procedure for new connection has been simplified and efforts are on to further reduce the time period required.

Table-2.3: Technical Highlights

33/11 KV Substation	22
Capacity of 33/11 KV Substations	880/1232
Maximum Demand (MW)	640
33 KV Overhead Line (km)	83
33 KV Underground Line (km)	216
11 KV Overhead Line (km)	1045
11 KV Underground Line (km)	361
LT Line (km)	1717
Distribution Transformer (Nos)	4938

(Data updated upto December, 2011)

2.8 Organisational Structure of DESCO

DESCO incorporated under the Companies Act 1994 with its own Memorandum and Articles of Association. The company as a whole owned by Government of Bangladesh and DESA representing government by acquiring 100% shares. DESCO managed by a part time Board of Directors appointed by its shareholders, they are responsible for policy decisions. The Board of Directors appointed managing Director and two full time Directors and they were also

members of the Board Directors after appointment. The organizational of the company is as follows:

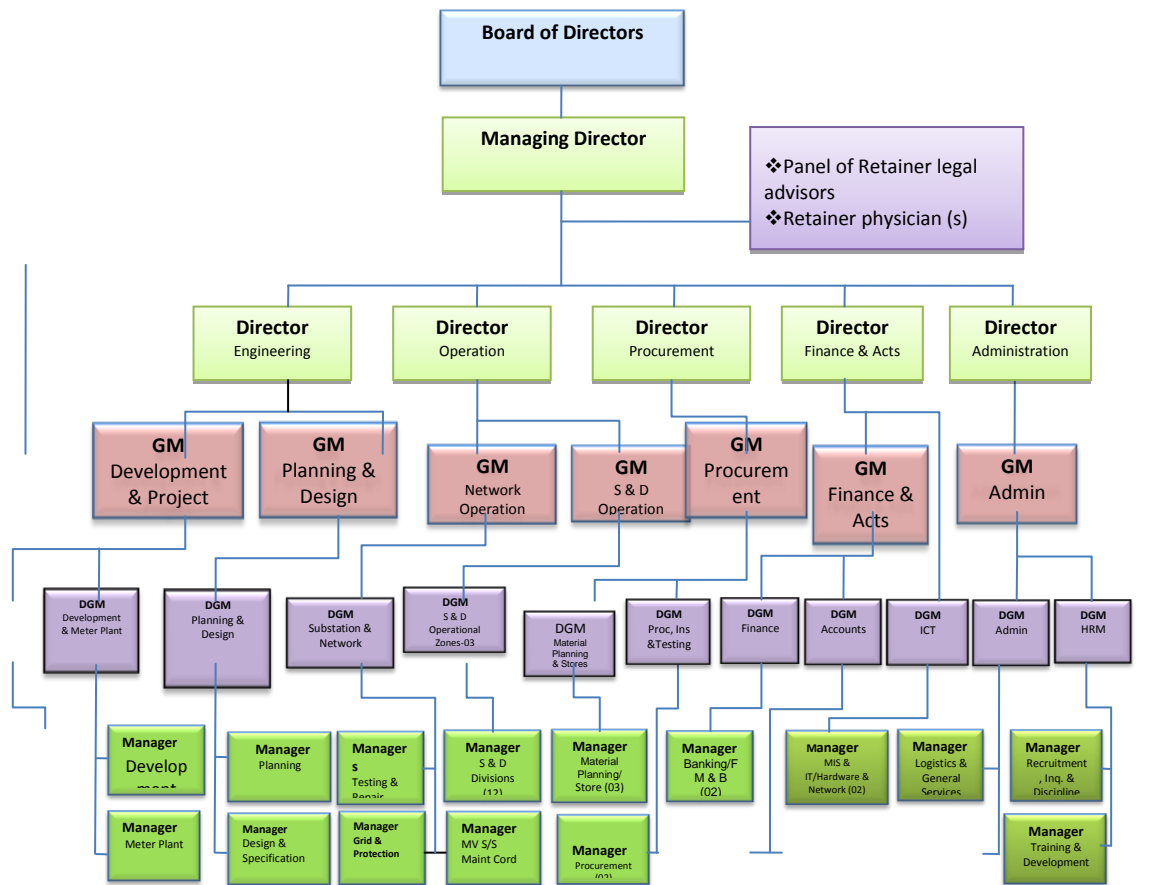
- The Chairman DESA being the Board of Directors on his nominee till such time DESA owns the majority of the shares in DESCO.
- The Managing Director acts as the Chief Executive Officer of the company and responsible for overall management of the company.

DESCO recruited its employees through open advertisement. The qualification and experience requirement were fixing up according to the requirement for performing their duties and responsibilities against the respective post. Mainly those who have sufficient experience in the field of utility organization are selected on a merit basis. They were employed on long-term contracted basis under the DESCO's service rules approved by its Board of Directors.

The structure of DESCO is functional in nature. In DESCO, employees tend to perform a specialized set of tasks. This leads to operational efficiencies within that group. However it could also lead to a lack of communication between the functional groups within an organization, making the organization slow and inflexible. Coordination and specialization of tasks are centralized at DESCO, which makes the services of the organization sometimes less efficient.

At present, the structure of DESCO looks as follows:

Figure-2.1: Existing Organogram of DESCO

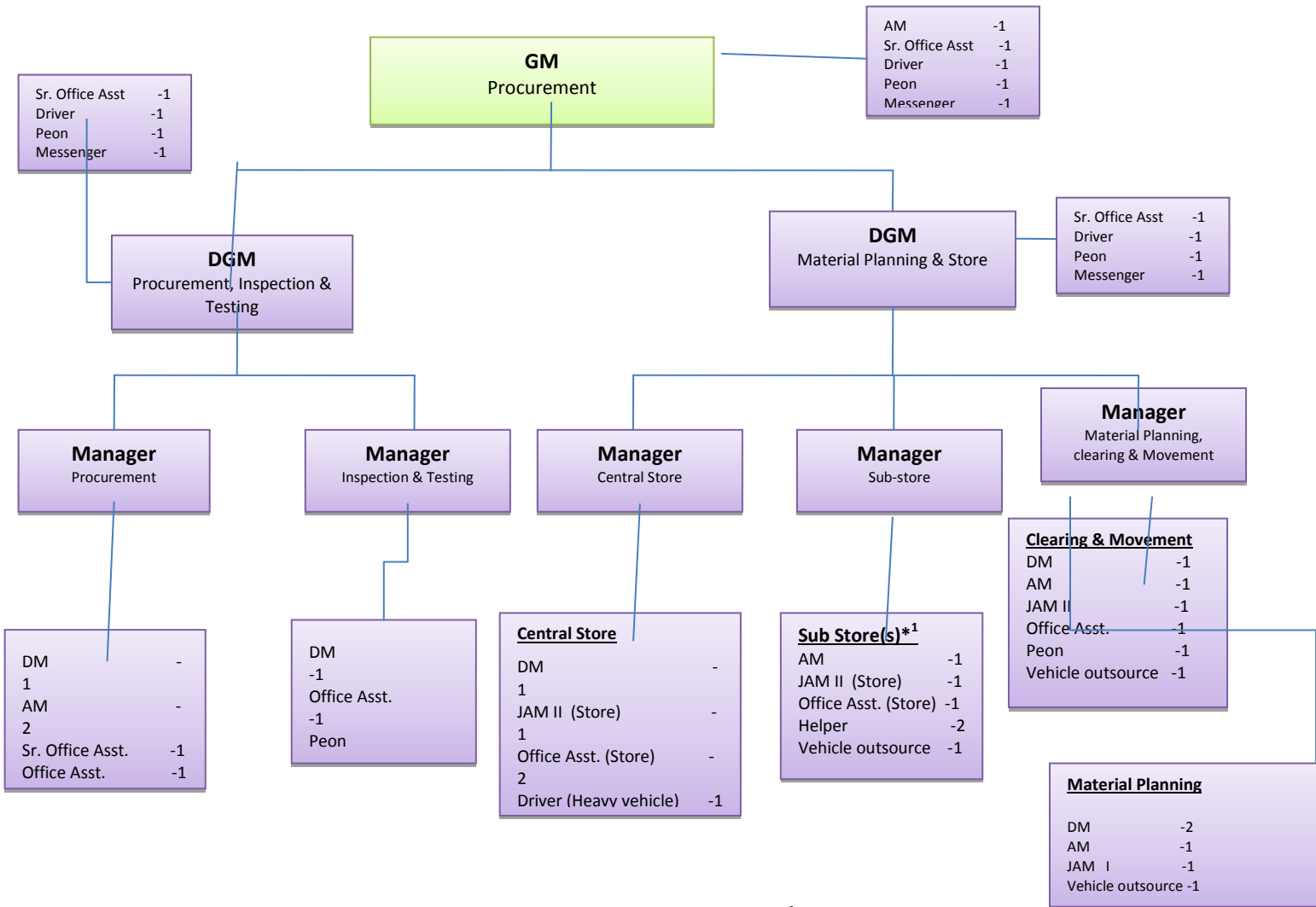


(Organogram-2010, Revision-2, approved by 195th Board Meeting as on 07.04.2011)

2.9 Structure of Store Management

Previously, Store Management of DESCO works haphazardly. There is no correlation between procurement and store management earlier. But now as top management deemed the importance of Store Management, it reflects in policy making of the organization. As per approval of 195th Board Meeting, the structure of Store Management is seen as under:

Figure: 2.2: Departmental Organogram of Store Management headed by Procurement



(Organogram-2010, Revision-2, approved by 195th Board Meeting as on 07.04.2011)

- Number of sub-store shall be decided by the management depending on requirement. The personnel shown are for one sub-store.

CHAPTER-3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology of this thesis; the main topics included in this chapter are research strategy, research design and population, sample size determination, case study, questionnaire design, questionnaire content, pilot study and tests of reliability and validity of questionnaire and the last but not the least is the process of data analysis.

3.2 Research strategy

Naoum (1998) defined the research strategy as the way in which the research objectives can be questioned. Two types of research strategies are used at studies, quantitative and qualitative research. Quantitative approach is used to gather factual data and to study relationships between facts and how such facts and relationships accord with theories and the findings of any research executed previously, but the qualitative approach seek to gain insights and to understand people's perception of "the world" whether as individuals or groups (Fellows and Liu, 1997). In this thesis, a qualitative approach is used to understand the perception of respondents in regard to existing performance and find out the possible ways for improvement of the Store Management of DESCO.

3.3 Research design

"Research design" refers to the plan or organization of scientific investigation, designing of a research study involves the development of a plan or strategy that will guide the collection and analyses of data (Poilt and Hungler, 1985). This research consists of seven phases; the first one is the proposal for identifying and defining the problems and establishment of the objectives of the study and development of research plan. The second phase of the research includes literature review. The third phase of the research includes written questionnaire survey and key informant interview to key people of DESCO. In addition some actual cases were collected from Central Store of DESCO. The fourth phase of the research includes the questionnaire design, through distributing the questionnaire to a sample of respondents. The purpose of the pilot study was to test and prove that the questionnaire questions are clear to be answered in a way that help to achieve the target of the study. The questionnaire was modified based on the results of the pilot study. The fifth phase of the research was questionnaire distribution. The questionnaire was used to collect the required data in order to achieve the research objectives. The sixth phase of the research focused data analysis and discussion. The last phase of the research includes the conclusions and recommendations.

3.4 Population

The populations of this research are the people who are directly and indirectly engaged with Store Management and procuring activities of DESCO

3.5 Sample Size Determination

Wood and Haber (1998) defined the sampling as the process of selecting representative units of a population for the study in research investigation. A sample is a small proportion of a population selected for observation and analysis. The samples were selected randomly from Store Management and procuring activities of DESCO

3.6 Methodology of this thesis

After surveying the previous approaches of methodologies, the suitable one is to use questionnaire and case studies methods.

3.6.1 Questionnaire Survey

A questionnaire was developed to assess the perceptions of respondents about existing performance and find out the possible ways for the improvement of Store Management of DESCO. Factors influencing the existing store performance of DESCO were first examined and identified through a relevant literature review and by conducting a pilot study that sought advice from experienced practitioners.

3.6.2 Cases and interviewees

Selecting the cases and interviewees serves as a critical step in case study research. The variety of actors involved indicates the presence of many different interests, opinions and motives. These actors, namely from Assistant Managers to Directors of DESCO, are involved in decision making process in a different manner of Store Management of DESCO. Experience with multiple projects and audit of the inconstancy of Store Management are being gathered from the experienced staffs.

Of course it is easier to draw up with a list of all the people one wants to talk to, but actually, arranging an interview is a step further, depending on goodwill and connections. Conveniently, my colleagues of DESCO were very accommodating in giving interviews.

The final list of interviewees is presented below, in chronological order:

1. Director and GM, 2 (two)
2. DGM,4 (four)
3. Manager, 5 (five)
4. Deputy Manager, 08 (eight)
5. Assistant Manager, 02 (two)

In addition, some past cases were carefully selected and investigated. These cases illustrate the link between the data collected by questionnaire and data in case, recommendations will be documented for each case.

3.7 Questionnaire design

Considering the conditions and circumstances surrounding Store Management of DESCO, factors, which affect the existing performance of DESCO have been selected.

3.8 Questionnaire content

The questionnaire includes: general information of the respondents, general perception and attitude regarding Store Management of DESCO, determine the Objectives and Scope of DESCO's Store Management, evaluate the strategic factors affecting the choice of Store Management, appraise and evaluate the role and effects of different stores at DESCO, assess Inventory Management of DESCO, examine and analyse security in different stores of DESCO, examine health and safety and legal issues involved in Store Management and evaluate the use of information and Communication Technology at Central Store.

3.8.1 General information of the respondents

Four items questions were prepared asking for information about respondents such as the name of the department, designation of the officer, relevant working experience (years), educational background

3.8.2 General Perception and attitude regarding Store Management of DESCO

This part of questionnaire consist of 8 (eight) questions to assess the general conception of people about Store Management of DESCO.

3.8.3 Determine the Objectives and Scope of DESCO's Store Management

This part of questionnaire consist of 10 (questions) to analyse objectives and roles of Store Management, total cost concept regarding Store Management, importance given by top management to Store Management.

3.8.4 Evaluate the strategic factors affecting the choice of Store Management

This part of the questionnaire evaluates factors such as short-term, midterm long-term planning of DESCO in regard to Store Management.

3.8.5 Appraise and evaluate the role and effects of different stores at DESCO

This part of the questionnaire appraises and evaluates existing design and layout of different stores at DESCO premises.

3.8.6 Assess Inventory Management of DESCO

This part of the questionnaire assesses stock records, stock movements, redundant stock, demand analysis of different stores at DESCO premises.

3.8.7 Examine and analyse security in different stores of DESCO

This part of the questionnaire analyses the personnel security, staff security and stock security of different stores at DESCO.

3.8.8 Examine health and safety and legal issues involved in Store Management

This part of the questionnaire examines health and safety issues of staffs, risk analysis of stores and legal areas for concerns of store in regard to Store Management of DESCO.

3.8.9 Evaluate the use of information and Communication Technology at Central Store

This part of the questionnaire appraises the use of ICT at Central Store to improve the existing performance of Store Management of DESCO.

3.9 Pilot study

These structured questionnaires should be based on a carefully prepared set of questions piloted and refined until the researcher is convinced of their validity. Therefore the pre-testing is an important stage in the questionnaire design process, prior to finalizing the questionnaire. It involves administering the questionnaire to a limited number of potential respondents and other knowledgeable individuals in order to identify and correct design flaws. The test was made by distributing drafts questionnaire among some selected respondents. In general, they agreed that the questionnaire is suitable to achieve the goals of the study.

3.10 Data Measurement

In order to be able to select the appropriate method of analysis, the level of measurement must be understood. For each type of measurement, there is/are an appropriate method/s that can be applied and not others. In this research, ordinal scales were used. Ordinal scale is a ranking or a rating data that normally uses integers in ascending or descending order. The numbers assigned to the agreement or degree of influence (1, 2, 3, 4, 5) do not indicate that the interval between scales are equal, nor do they indicate absolute quantities. They are merely numerical labels. In this research statements based on a Scale from 1-5, where 1 represents the “Least Important” or “Strongly Disagree”; 5 represents the “Most Important” or “Strongly Agree”; and “N/A” are set if someone thinks that he/she is uncertain in rating a particular statement.

3.11 Triangulation

In the social sciences, triangulation is often used to indicate that more than two methods are used in a study with a view to double (or triple) checking results. This is also called "cross examination"

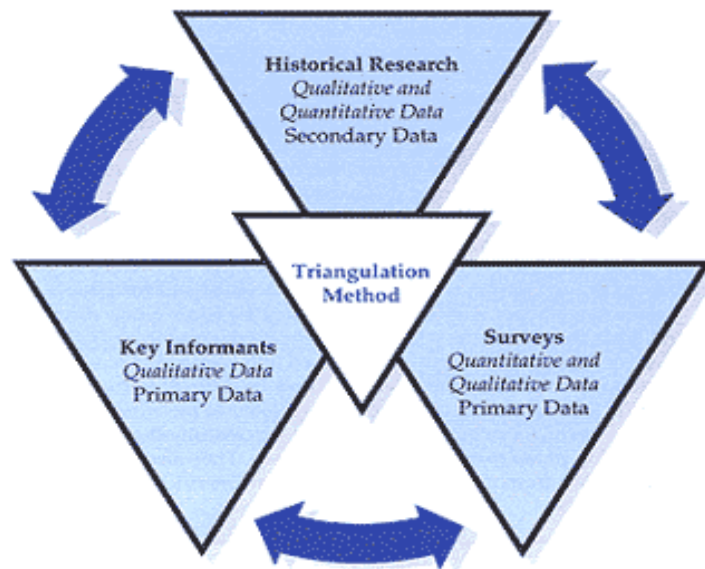
The idea is that one can be more confident with a result if different methods lead to the same result. If an investigator uses only one method, the temptation is strong to believe in the findings. If an investigator uses two methods, the results may well clash. By using three methods to get at the answer to one question, the hope is that two of the three will produce similar answers, or if three clashing answers are produced, the investigator knows that the question needs to be reframed, methods reconsidered, or both.

Triangulation is a powerful technique that facilitates validation of data through cross verification from more than two sources. In particular, it refers to the application and combination of several research methodologies in the study of the same phenomenon.

- It can be employed in both quantitative (validation) and qualitative (inquiry) studies.
- It is a method-appropriate strategy of founding the credibility of qualitative analyses.
- It becomes an alternative to traditional criteria like reliability and validity.
- It is the preferred line in the social sciences.

By combining multiple observers, theories, methods, and empirical materials, researchers can hope to overcome the weakness or intrinsic biases and the problems that come from single method, single-observer and single-theory studies.

Figure 3.1: Triangulation Method



The protocol used in this thesis is methodological triangulation, basically entailing the use of different kinds of methodologies to arrive at a valid interpretation or generalization:

- Multiple observations of theory where applicable
- Key Informant Interviews
- Qualitative Data Analysis
- Reflection with supervisor

These methods can also be used at triangulation protocols on their own, as multiple observations within the same method could also provide proper base for triangulation.

3.11 Conclusion

Based on the design of the research, this thesis work is carried out and the data and associated findings are analysed to arrive at a justifiable conclusion regarding the answers to the research questions.

CHAPTER-4

LITERATURE REVIEW

4.1 Procurement

Procurement is the process of obtaining goods and services from preparation and processing of a requisition through to receipt and approval of the invoice for payment. It commonly involves (1) purchase planning, (2) standards determination, (3) specifications development, (4) supplier research and selection, (5) value analysis, (6) financing, (7) price negotiation, (8) making the purchase, (9) supply contract administration, (10) inventory control and stores, and (11) disposals and other related functions.

4.2 Procurement Process

Procurement process is always called Purchasing and the group within the organization, the Purchasing Department. Purchasing process is more or less the same step by step process in every organization, irrespective of the size or the business they are in to. Purchasing is often understaffed and the resources are pulled into day-to-day operational activities, leaving precious little time to focus on strategies and tactics. Most of the cases, true procurement skills and expertise did not exist within the organizations.

The purchasing process involved several steps— which get initiated when an employee realizes the need for an Item or Service. In almost all the cases, it is a reactive operational or clerical job that will follow once a need is realized. The employee will submit a material or service requisition containing the details of required item or service to the immediate supervisor, who, based on the authority set, will approve the requisition. Usually requisition will contain description of the item and the quantity required. The approval authority will be typically set based on the nature cost and/or volume of the item or service. For example, standard office supplies for an individual may not need any approval. However, if there is training for which a set of office supplies are required, would need an approval from the concerned higher authority. On the other side, a desktop computer or flight ticket or hotel accommodation will always need an approval.

Once the material requisition (MR) is approved, it is given to the inventory/store/purchasing department. If that is a stocked item (like office supplies and MRO), the item will be issued to the requester. In case of a service, non stocked items and items that are out of stock, the purchasing team will initiative for the buying process.

A purchase requisition (PR) is the first formal document in the purchasing process. It is usually generated by the Purchasing department and approved by approving authority and finance team. This will contain similar details like in a material request, however, may have same or multiple items required by various groups or individuals in the organization.

The real purchase starts with finding the suppliers or service providers who can deliver the specific goods and services. Tenders and Quotations has been the traditional formal method of finding and selecting vendors. The company issues a tender notification seeking proposal from qualified suppliers. Tenders are usually notified through newspapers and other mass communication media as well as through direct communication with known or incumbent suppliers. Suppliers send the quotations along with other detail on the good or services as well as delivery terms.

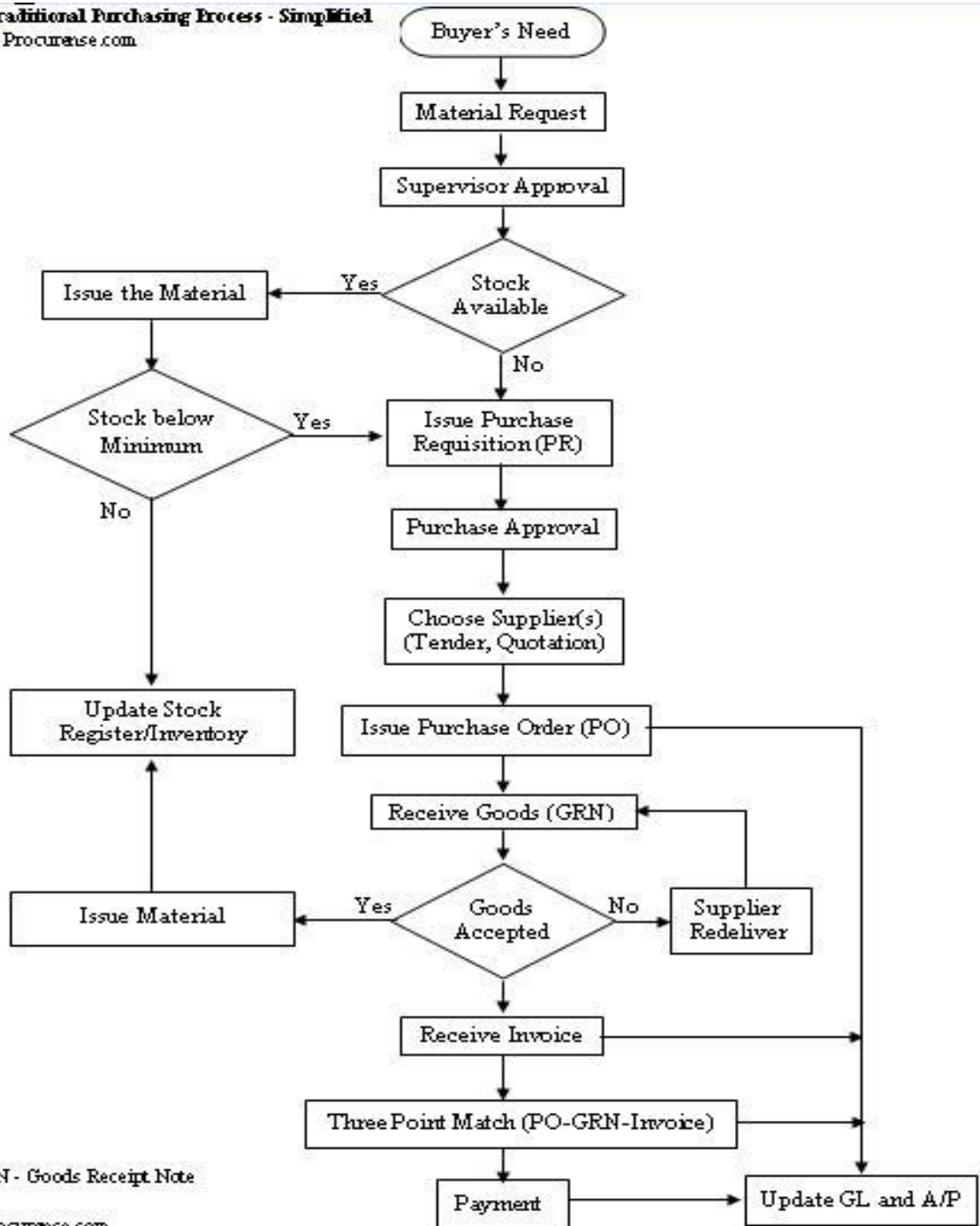
Upon receipt of quotations, one or many suppliers will be selected based on the specific requirement to deliver the good or services. A purchase order (PO) will be send to chosen supplier(s) asking them deliver the goods or services. PO is the first legally valid document that companies send to its supplier. It is a legal agreement warranting to accept the goods or services delivered and to pay as agreed. Typically suppliers send an acknowledgement note for the POs received as an acceptance of the order and to confirm the delivery terms.

Based on the agreed up on timeline, supplier will deliver goods or services. This will be notified through a Goods Receipt Note (GRN). At times, the delivery may not be in full, a partial delivery would be made based on the circumstantial requirements. The good will then go through the inward quality and acceptance process, passed good will be taken in to store, accounted in inventory and then issued to the requestor. In case the goods get rejected for any reasons, it will be send back to supplier for replacement.

Upon the goods acceptance, supplier send across Invoice which is a payment request for the goods or services delivered. Like in case of delivery, invoice can be for a partial delivery. A three point matching, i.e. tally Purchase Order with Goods Received with the Invoice, will confirm the integrity of the transaction. This gets entered in to the Account Payable (AP) system as a payable entry. Once the necessary finance approvals are done, payment will be made to the supplier through the agreed up on means and AP entry get updated with actual payment details.

Below is how a traditional Purchasing process used to work:

Figure 4.1: Purchasing Process



4.3 Existing best practice of Store Management

4.3.1 Store Management and its objectives and roles

Storage can be defined as a temporary location for materials required for operational purposes. Consequently, the objective is that storage should be planned, organised and operated in such a way that the timeframe over which stock is held should be as short as possible consistent with operational requirement. On the other hand, distribution is the efficient movement of finished product from the end of the production line to the consumer, and in some cases includes the movement of raw materials from the source of supply to the beginning of the production line. These activities include freight

transportation, warehousing, materials handling, packaging, inventory control, plant and warehousing site selection, order processing, marketing, forecasting and customer service. Physical storage and distribution have crucial roles to play in helping to deliver the objective of ‘delighting the customer/end user’.

Stores are normally divided into various sections such as receiving section, tool stores, general stores, raw materials stores, finished parts stores etc. stores plays a vital role in the operations of a company. Stores networks are incredibly complex and therein lay the opportunity of improvement. Stores act as a cushion between purchase and manufacturing on one hand and manufacturing and marketing on the other. The inherent limitations of forecasts make the stores function a necessity.

Stores function is an inseparable part of all business and non – business concerns, whether they are industrial or service, public or private, small or large. The task of store keeping relates to safe custody and stocking of materials, their receipts, issues, and accounting with the objective of efficiently and economically providing the right material at the right time whenever required in the right condition to all user departments.

4.3.2 Functions of store Management

The following are the principal functions of a store:

- To receive raw materials, components, tools, spares, supplies, equipments and other items and account for them.
- To provide adequate, proper and efficient storage and preservation for all the items.
- Physical checking of all incoming materials as per the delivery challan/invoice and proper maintenance of daily goods receipt register or records.
- Arrange for inspection of incoming materials.
- Ensure that goods inward notes are raised and distributed without delay
- Issue materials to the consuming departments against authorised requisitions and account for the same.
- Maintain accurate and up – to – date records of material received, issued, rejected, disposed, and quantity on hand of all the items.
- Ensure that all documents relating to receipts and issue are sent to stock control, accounts and other concerned departments.
- Undertake stock verification as per approved procedure.
- To highlight stock accumulation, discrepancies and abnormal consumption and initiate appropriate control action, wherever necessary.
- To minimise obsolescence, surplus and scrap through proper codification, standardization, preservation and handling.
- To ensure good housekeeping so as to minimise the need for material handling.
- To make available a balanced flow of materials so as to economise on capital tied up in inventory.
- To accept and store scrap and other discarded materials.

Depending upon the nature of business (i.e. manufacturing, trading services, etc.) one or more of these functions may gain primacy over the rest.

4.3.3 Recent Developments in Store Management

- Recognizing the importance of customer service (shown in more clearly defined customer care policies) together with realizing that logistics can provide a competitive edge through the quality of service to customers.
- Concentrating manufacturing units, maximising productivity in production and ignoring political frontiers.
- Centralising distribution depots.
- Developing sophisticated computer programmes, using the latest techniques in simulation modeling and tracking.
- Improving product control in the use of product dating, barcoding and radio frequency identification discs (RFID), so shorter-life products can be handled more effectively.

4.3.4 Standard Delivery Process

- Ordering should be simple and straightforward.
- Internal processes should ensure the availability of goods within an agreed timeframe.
- Systems should help the order to progress without undue delay.
- Goods should be available when required in the correct location in direct correlation to the meeting of agreed customer service levels.
- Customers should be kept informed of progress.
- Delivery time and place should be agreed.
- Delivery should be made as agreed.
- In case of undue delay customers should be kept informed.
- Records should be kept in relevant areas such as on-time deliveries, customer complaints and claims, to monitor the effectiveness of the service.
- Drivers should be polite, smart and well trained in customer service skills.

4.3.5 Warehousing

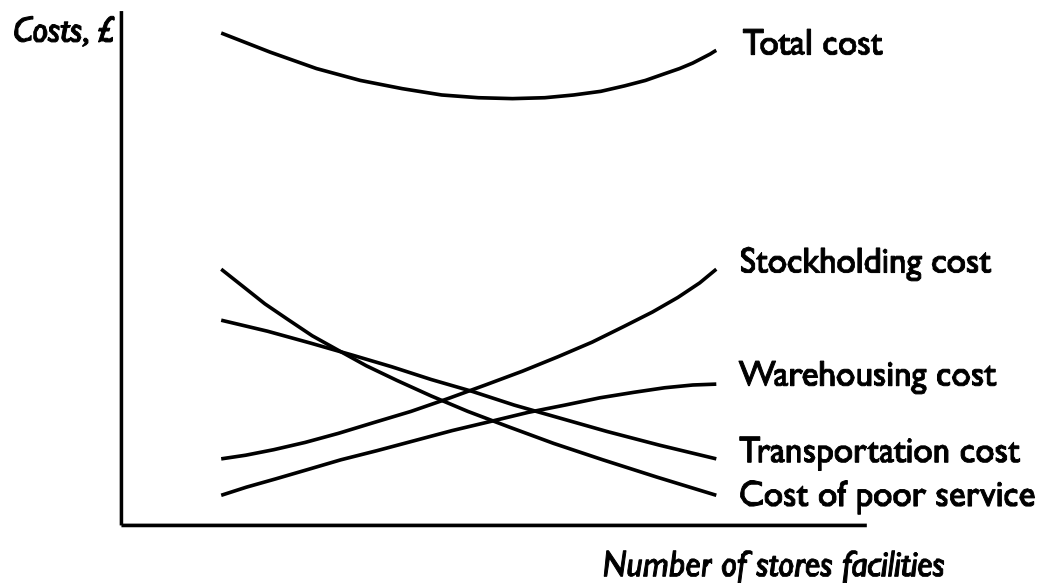
4.3.5.1 Factors determining storage requirements

- Number of outlying units to be served by the stores
- Location of the outlying units of stores
- Number of stock items to be held
- Classification of store items
- Classification of store items by usage
- Volume of stock to be issued/ received each day
- Major handling equipment to be used (mobile cranes, forklift trucks, conveyors etc)
- Type of transport modes

- Number of trucks/pickups to be loaded or unloaded each day
- Necessities for rail or water borne transport
- Requirement of staffs in stores

4.3.5.2 The cost of stores facilities

Figure 4.2: Cost of Store Facilities



4.3.5.3 Reasons for holding stock

- To minimise production costs.
- To take account of variable lead time. Owing to production costs or the costs that may be incurred in not meeting customer service standards it may be deemed necessary for safety stock to be held.
- To minimise buying costs.
- To take advantage of bulk discounts.
- To allow for price fluctuations and speculation.
- To accommodate seasonal fluctuations.

4.3.5.3 Factors in warehouse design

- Purpose of the warehouse
- Choice of materials handling systems and equipment
- Size
- Location
- System requirements
- Overall layout

4.3.5.4 Data required for warehouse design

- Goods handled (inventory levels, handling requirements)
- Order characteristics (service levels, order frequency)
- Goods arrival and despatch patterns (vehicle types and sizes, unit loads to be handled)
- Warehouse operations (picking and packing, administration)

4.3.5.5 Design and layout principles for warehouses

- Use a one-storey building wherever possible.
- Use straight-line or direct flow of goods in and out of the warehouse with goods being delivered at one end, held, and ranked according to ABC analysis.
- Utilise an effective storage plan to maximise warehouse operations and to avoid inefficiencies.
- Use efficient materials handling equipment.
- Minimise aisle space within the constraints of the size, type and turning circle of materials handling equipment.
- Maximise use of the building's height to use the cubic capacity fully.
- Use an efficient system of product identification.
- Plan for growth.
- Ensure full attention is given to health and safety issues.

4.3.5.6 Features of an effective warehouse

- A building design that allows for maximum flexibility
- Good road and rail access
- Ideally the location should be 'out of town'
- Doors and loading bays that allow ready access while offering security
- Additional outside parking for vehicles that may need to queue to gain access
- Clear access within the warehouse
- Durable and sealed floor surfaces
- Adequate ceiling height
- Dry, well-ventilated atmosphere with adequate heating
- Good security features
- Adequate lighting with natural light where possible
- Compliance with building and fire regulations
- Adequate parking facilities for staff and access via public transport
- Office space

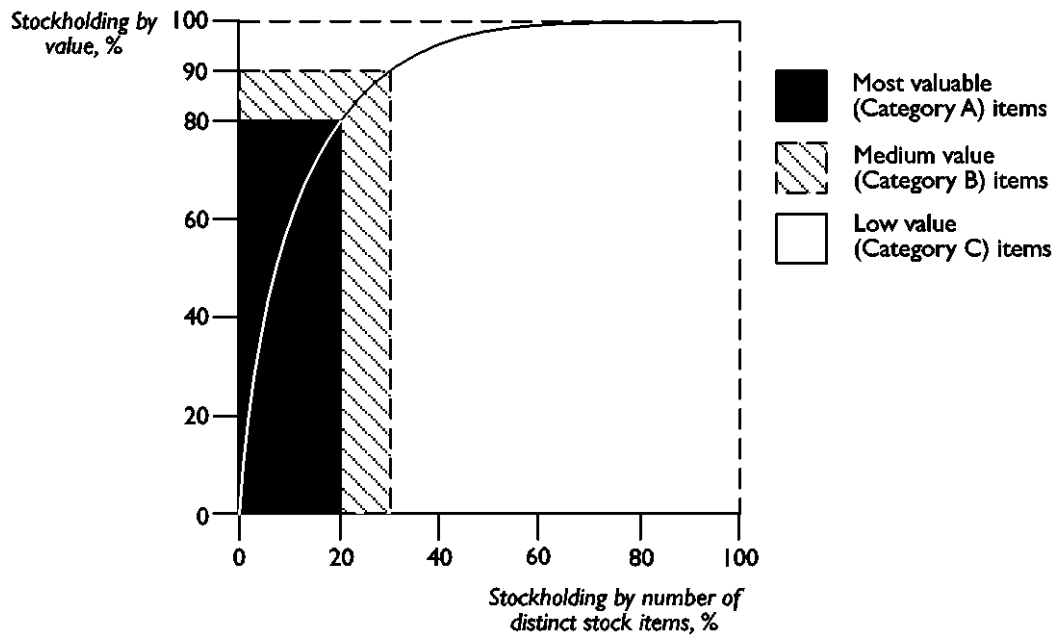
4.3.5.7 Factors in selecting a storage system

- Type of goods handled
- Suitability of goods for unit loads
- Effective utilisation of the 'cube' of the building, perhaps requiring high-aisle racking and hence appropriate handling equipment
- Accessibility
- Security considerations
- Personnel safety

4.3.5.8 Pareto Analysis

- Vilfredo Pareto, an Italian economist and sociologist, concluded that in any series of elements to be controlled a selected small factor in terms of number of elements (20%) almost always account for a large factor in terms of effort (80%). Pareto subsequently developed this observation into a more defined 80:20 rule.
- The Pareto principle serves as the basis for materials management value segmentation and in this context is more commonly referred to as ABC Analysis. This is based on the concept that approximately 80 percent of the total value of stock items will be accounted for by approximately 20 percent of the items.
- The usage value of each item will dictate the stock classification it is allocated
 - Category A items: The ‘vital few’. Small in number but high in usage value
 - Category B items: ‘Normal’ items. Medium in number, medium usage value
 - Category C items: The ‘trivial many’. High in number, low usage value

Figure 4.3: Pareto Analysis

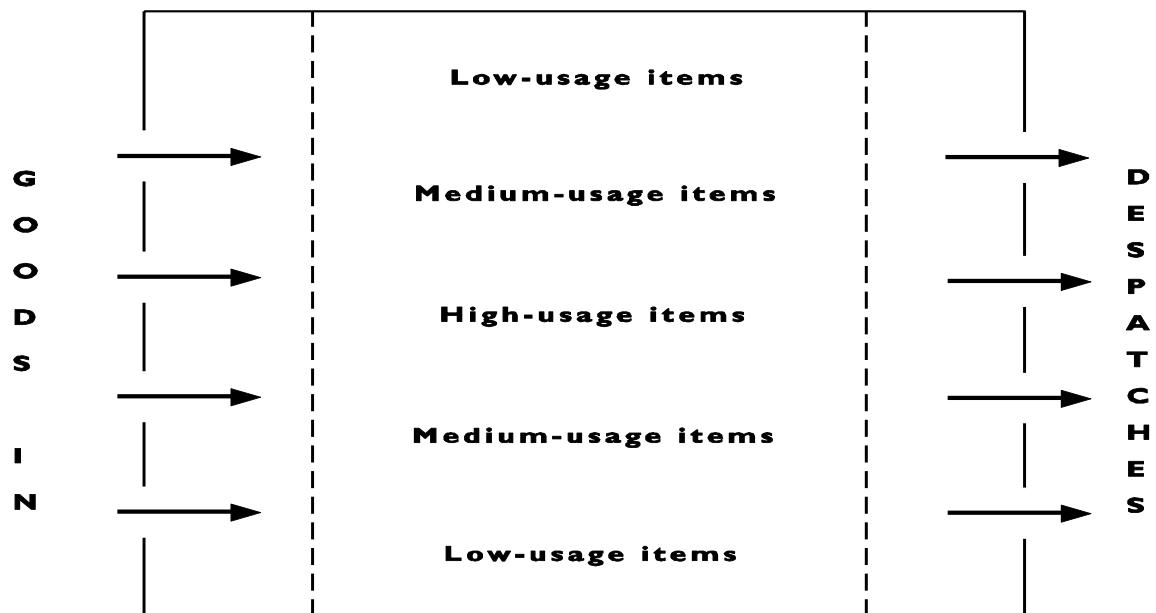


4.3.6 Types of Warehouse Layout

4.3.6.1 The throughflow system

Straight line or throughflow is one of the most effective layouts, with goods arriving at one end of the warehouse and being handled in a designated area before being located in their appropriate position in the warehouse.

Figure 4.4: The throughflow system



Advantages of throughflow systems are:

- Useful if goods in and goods out vehicle requirements are different.
- Works well if it is in a natural flow with other processes.
- Total separation of the 'in' and 'out' sections reduces scope for error.

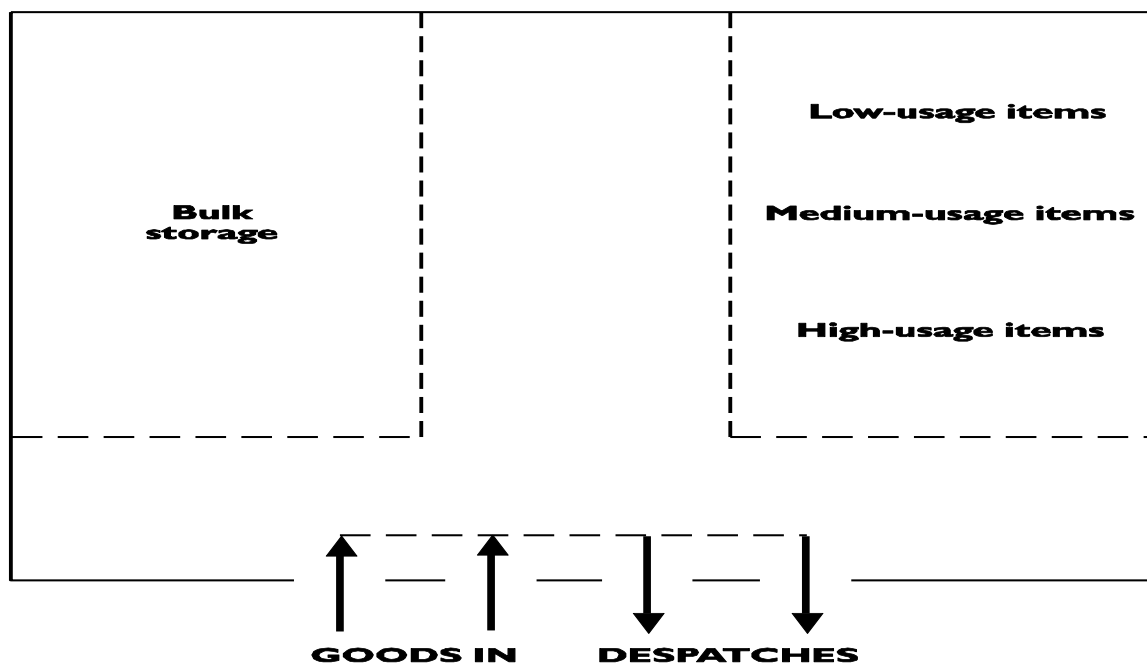
Disadvantages of throughflow systems are:

- Loading bays take up a lot of space.
- Bay security and management may be more difficult.
- Internal movement may be greater than with other systems.

4.3.6.2 The 'inverted T' system

Inverted T flow allows the warehouse to be divided to meet long-term storage needs. Stock is then positioned in line with usage, the most frequently used items being nearer the pick-and pack or despatch area.

Figure 4.5: The 'Inverter T' system



Advantages of the inverted 'T' flow system are:

- Good utilisation of loading bays and materials handling equipment.
- Flexibility for expansion on three sides.
- Popularity storage reduces need for movements.
- Segregation aids handling.

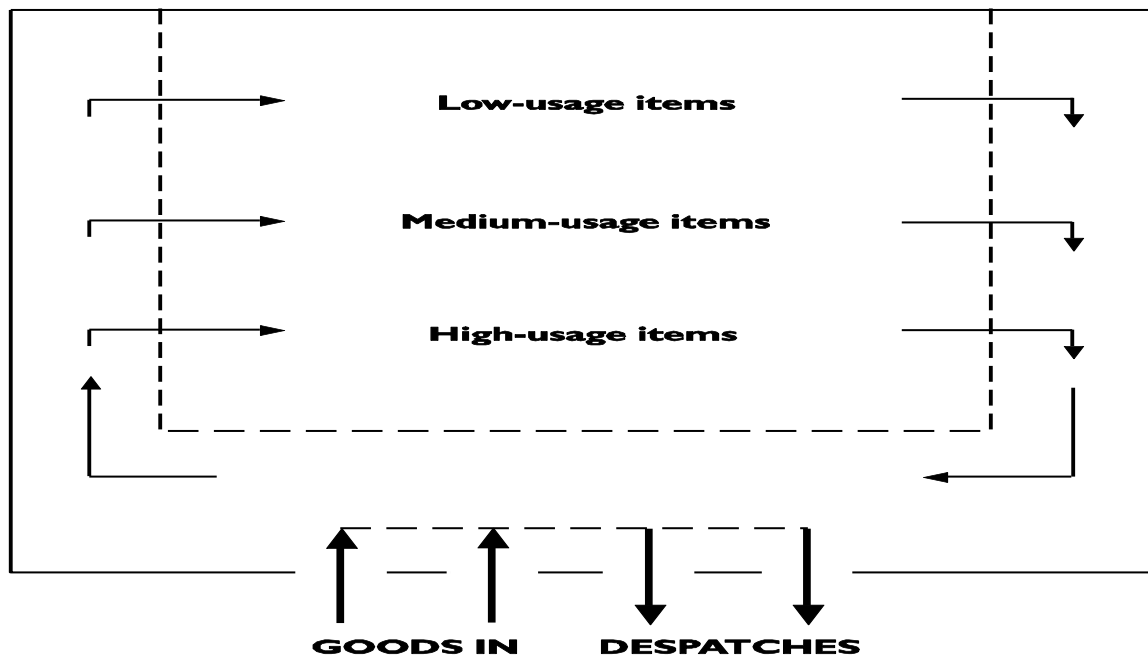
Disadvantages of the inverted 'T' flow system are:

- Central aisle becomes prone to congestion.
- Expansion requires some modification of flow.
- Moving items from bulk storage to stock or to despatch requires tight control.

4.3.6.3 The crossflow system

The crossflow layout utilizes the full width of the warehouse. Within the low/medium/high-usage areas there is often a usage weighting placing.

Figure 4.6: The crossflow system



Advantages of the 'crossflow' system

- Good utilization of loading bays and materials handling equipment.
- Flexibility for expansion on three sides.
- Popularity storage reduces movement.
- A combination of 'bulk' and 'standard' stock can be utilised across the width of the warehouse, normally with Category A items the most accessible and bulk items the least accessible in terms of flow.
- One-way flow is clearly defined.

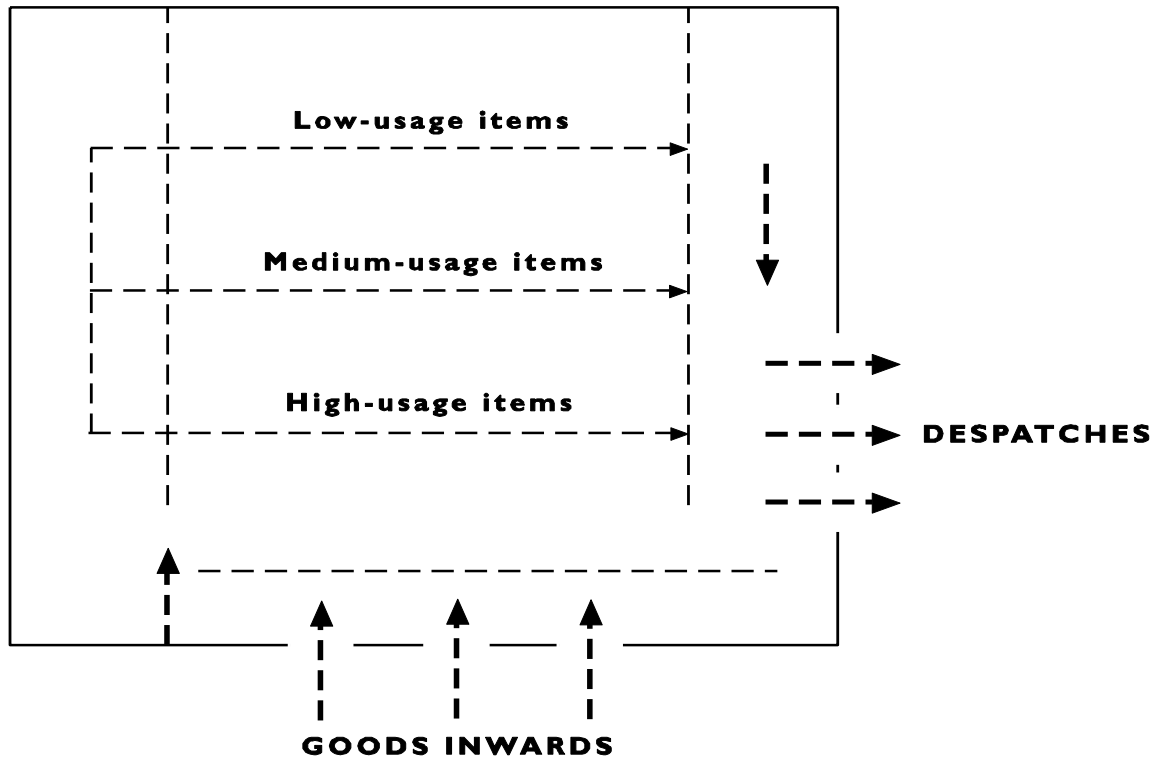
Disadvantages of the 'crossflow' system are:

- Segregation into high, medium and low usage may not always be possible.
- Combination of 'bulk' and 'standard' stock can present problems.

4.3.6.4 The cornerflow system

In the corner warehouse flow, goods flow in and out of adjacent walls of the warehouse, joined at a corner. This layout serves to reduce congestion in the aisles particularly in terms of high throughput. The system often provides a practical operating compromise that allows the goods inward, flow and despatch areas to integrate effectively.

Figure 4.7: The cornerflow system



4.3.7 Warehouse KPIs

4.3.7.1 Warehouse KPIs: Cost

- Staff, including overtime and other payments
- Building and site
- Equipment and other resources
- Maintenance
- Pallets and pallet repair
- Usage of packing materials and other consumables.
- Service, including any bought-in services

4.3.7.2 Warehouse KPIs: customer service

- Stock availability in the warehouse
- Order lead-time
- Percentage of orders completed on time
- Percentage completeness of order fill
- Number of outstanding back orders
- Damaged stock
- Returns and customer complaints

4.3.8 Types of Racking

- Fixed pallet racking is constructed of a strong frame usually made of steel with shelving of the same material.

- Adjustable pallet racking is similar in design but is configured so that the shelves can be set at any required height and adjusted as necessary.
- Drive-in and drive-through racking. These are pallet-based racking systems that allow access for forklift trucks.
- Push-back racking allows pallets to be stored up to four pallets deep on flexible racking.
- Cantilever racking is designed for the storage of long items such as bars, tubes and sheet materials.
- High-rack and narrow-aisle racking. Designed to maximise space, the racking utilises the full height of the warehouse with aisles placed as close as possible to each other to allow access by either manually driven or computer-controlled forklifts.

4.3.9 Types of Shelving

- Long-span shelving offers a full range of beam sizes and load capacities that are easily adjustable in sturdy upright frames.
- Closed shelving with sheet steel backing and sides easily divided for small parts storage.
- Carton live storage allows containers or tote-boxes to flow down inclined rollers permitting first in, first out (FIFO) stock rotation and order picking.
- Line-side carton live storage units operate in a manufacturing or assembly area and are particularly suitable where just in time (JIT) manufacturing processes are used.
- Mobile shelving systems permit increased flexibility and can make the best use of usable space.

4.3.10 Types of Pallets

- Standard two-way or four-way wooden pallets where the forklift can approach the pallet from two sides or four sides respectively.
- Box pallets are standard pallets with a box structure incorporated into the design.
- Eco pallets are used extensively in the food and pharmaceutical industries.
- Post pallets have a post framework at each corner and this provides stability for goods that are not always suitable for palletisation.
- Steel pallets suitable for heavy loads or drums etc.

4.3.11 Material Handling Equipment

4.3.11.1 Methods of Material Handling

- Manual handling
- Manually operated mechanical handling equipment
- Forklift trucks
- Crane systems
- Conveyors

4.3.11.2 Selecting Materials Handling Equipment

- What requirements are imposed by the nature and types of goods to be handled?
- What requirements or constraints should be considered in respect of the warehouse?
- What is the cost-effectiveness of using different types of handling equipment?
- What quantity of material will be handled?
- What loading distances have to be travelled (horizontal and vertical)?
- Does the use of certain types of equipment enhance safety within the operation?
- What activities are taking place in adjacent areas?
- What flexibility is required?

4.3.12 Stock Records

4.3.12.1 Reasons for maintaining stock records

- To indicate the quantity of any item without the need to perform a time-consuming physical count.
- To indicate when new supplies should be ordered or manufactured.
- To act as a check on physical stock levels.
- To record the locations where items of stock are held.
- To provide financial information, eg for use in pricing or for preparing periodic financial statements.

4.3.12.2 Advantages of a good coding system

- It avoids repeated use of long descriptive titles.
- It accurately identifies all items.
- It prevents duplication of items.
- It assists standardisation and variety reduction.
- It provides a foundation for an efficient purchasing organisation.
- It forms a convenient basis for sorting and recording of documents.
- It simplifies recording.
- It is convenient for central analysis of unit storehouse records.
- It can be employed as a basis for stock control accounts.
- It may be used as a warehouse location system.

4.3.12.3 Principles for developing Coding System

- It must be capable of covering all items likely to be used, not only now but also in the future.
- It must be designed to suit the needs of the organisation.
- It must allow for expansion without duplication occurring.
- Each item must appear only once and the system must be designed to ensure this occurs.
- There must be a constant number of symbols or digits in all code references.
- Each group of symbols and/or digits must signify only one object.

- Descriptions and specifications on which the system is based should be as brief as possible while maintaining accuracy.

4.3.13 Considerations in a stock management policy

- Customer service levels required
- Nature of the relationship with suppliers (eg strategic; building the supply chain; adversarial; getting the best value for the organisation, etc).
- Financial constraints
- Stock investment
- Nature and type of goods
- Competitive considerations

4.3.14 Obsolete and redundant stock

4.3.14.1 Definition

- Obsolete stock is stock that has become outdated and is no longer appropriate for current requirements.
- Redundant stock is stock that is excess to foreseeable requirements. Redundant stock can arise from over-ordering or because of a failure to react appropriately to a decline in demand for the item.

4.3.14.2 Minimising obsolescence and redundancy

- Ensuring that patterns of demand are monitored continually so that stockholding policies can be modified in line with changes at an early stage.
- Ensuring that there is regular communication between purchasing and other functions.
- Maintaining stocks as low as is practicable on items that are liable to become obsolete.
- Ensuring that required items are on hand at the time they are needed or not much earlier.
- Instigating regular checks on stockholdings.

4.3.15 Security issues in warehouse layout

- The total number of doors.
- Containers, skips or waste bins should be placed away from doors.
- Cargo is at its greatest risk when being loaded and unloaded.
- Toilets and rest areas should be positioned so as to ensure that drivers do not enter into the body of the warehouse.
- Employee parking should not be too accessible to employees who wish to steal inventory.
- Use warehouse equipment that secures areas.
- The use of night patrols and guard dogs can enhance the security of premises.

4.3.16 Safety Areas in Stores

4.3.16.1 Four safety areas in stores and distribution

- Physical distribution
- Working areas
- Forklift trucks
- Racking

4.3.16.2 Internal and External Theft Risks

Internal risks including the following:

- Possible break-in to stores.
- Theft by store staffs (either petty theft, or organized theft on a large scale)
- Deliberate miscounting of goods onto vehicles.

External risks include the following:

- Theft by delivery drivers, including possible collusion with external people
- Theft of vehicle (either from the company premises or at external locations)
- Hi-jacking of vehicle load
- Theft by external security guards.

4.3.17 Information Technology at Stores

4.3.17.1 Information at different levels of management

- **Top-level management** requires information for strategic and policy-planning decisions.
- **Middle management** requires information for tactical planning and decision-making.
- **Supervisors** require information for operational planning and control.
- **Operators** require information relating to deliveries, order processing, and enquiry response.

4.3.17.2 Characteristics of computerised warehouse management systems

- Accuracy by reducing errors inherent in manual clerical recording, and by reducing or eliminating altogether the need for human data input or transfer
- The speed of data collection, processing and communication, including immediacy of updating computer files and immediacy of information recall
- The facility for work planning and allocation of staff and equipment
- The reduction or elimination of clerical effort
- The ability to process and present information
- The ability to track goods as they move through a system
- The ability to work out present performance monitoring information
- Information visibility

4.3.17.3 The impact of IT in warehouse operations

- Radio frequency identification discs (RFID) allow for more information on products to be captured by the stock management system.
- Electronic data interchange (EDI) allows the transfer of standardised or formatted data for declarations to HM Customs & Excise or standard inter-company data and reports.
- Increased computing power, the internet and increased use of e-mails have also benefited warehousing.

4.3.17.4 Benefits of ICT in Store Management

- Faster communications
- Information sharing
- Track and trace systems
- Telematics
- Direct ordering
- Streamlined administration
- Greater information gathering potential
- Closer links with suppliers and partners
- Inventory management

4.4 Present Store Performance at DESCO

4.4.1 General Information about different stores at DESCO

- A total number of 17 (seventeen) Stores are being located at DESCO to store different types of goods and materials to be kept for usage as and when required.
- Central Store, headed by Manager (Store), is situated at Mirpur. Office of the Manager (Store) is in the premise of Central Store and his duties and responsibilities are to coordinate the activities of Central Store and other stores.
- Records of stores are being kept at Central Store.
- While designing the stores, standard best practice are not considered. While stores were built on ad hoc basis to store the goods.
- DESCO's stores and spares stands 403 crore which is a major concern for DESCO Management.
- KPIs are not set to improve the existing performance of Stores.

Table 4.1: Store Details of DESCO

Sl. No	Store Name	Inaugurating Year for Operation	Description of Materials and Equipments that has been kept in respective Stores
1	Central Store, Mirpur	2003	Transformer and Transformer Accessories, Conductor and Conductor Accessories, Pole

Sl. No	Store Name	Inaugurating Year for Operation	Description of Materials and Equipments that has been kept in respective Stores
			and Poole Fittings, Service Cable Tools and Equipment, Maintenance & Essential Spares for Substation, Meter and Meter Accessories, Disc Fitting, Sub-station Materials, insulator etc.
2	Mirpur-12, DOHS	2003	500 mm ² Underground Cable, 11 KV ABC
3	Mirpur-12, Store Yard	2009	11 KV ABC
4	Agargaon Store Yard	2009	500 mm ² Cu and 185 mm ² Al & Cu Underground Cable, Steel
5	Majar Road, Mirpur-01	2009	Hardware, Meter, Transmission Kit etc.
6	Mirpur-14, Store Yard	2009	AVR and Accessories
7	Bashundhara Grid	2009	500 mm ² Cu Underground Cable
8	Uttara Grid	2009	500 mm ² Cu Underground Cable
9	Uttara-12 Balur Math	2009	SPC Poles
10	Uttara-14 Store Yard	2004	Conductor, Power Transformer, Hardware
11	Dakshinkhan Substation Store Yard	2009	300 mm ² and 300 mm ² Cu Underground Cable
12	Kaderia Math-01, Tongi	2009	Steel & SPC Pole, 500 mm ² , 300 mm ² , 185mm ² Cu & Al Underground Cable, 11 KV & 400V ABC
13	Kaderia Math-02, Tongi	2010	SPC Poles
14	Mill Gate, Substation-03, Tongi	2009	Three Phase Transformer
15	Substation-01, Tongi	2009	Three Phase Transformer, Insulator
16	BISIC Substation, Tongi	2009	Auto Voltage Regulator, Conductor, Hardware
17	Purbachol Store Yard	2009	SPC Poles

4.4.2 Organization and management of Stores

At present there is as such no responsibility, authority and delegation of personnel for Store Management is clearly defined. No job descriptions were developed till date. Store Management also deals with lack of adequate number of competent personnel. Store staffs have lack of basic skills training on some of operational accuracy issues being currently encountered.

4.4.3 Store Management Strategy

Store Management has no specific objective and targets right now. There is no long term planning, medium term planning and short term planning exists at store management. No key performance indicators has been set yet to measure the day-to-day decision making to improve day -to-day store performance.

4.4.4 Store areas

Currently stores of DESCO have not that much capacity to allow the orderly storage of the various categories of goods. Reception areas of stores are not well-designed and well-equipped to allow vehicles of incoming goods. Sometimes items such as conductor and cables, transformers are not separated from light/small items.

Most of the stores of DESCO premises are of one-storey building. Some store items such as underground cable lines or over ground cable line are being kept inside the open space of stores. Again while storing the goods, high-usage, medium-usage and low-usage items are not considered. There is as such no storage plan to maximise store operations and to avoid inefficiencies. Regarding aisle space, Store Management has no plan. Aisle space are not minimized within the constraints of the size, type and turning circle of materials handling equipment. In addition, adequate ceiling height, durable and sealed floor surfaces, adequate lighting facilities, well ventilated atmosphere are not maintained at different stores of DESCO.

When it comes to standard warehouse layout, Store Management is unacquainted of the issue. They just store the items when it comes to the stores. Traditional Shelves and racks are set at different stores of DESCO. In this connection, world best practice shelves and racks are not considered. As far as Material Handling Equipments is concerned, DESCO use manual handling equipment, forklift trucks and boom trucks. Though the equipments are very old to use at.

4.4.5 Capital tied up in store

There is as such no long term, medium term and short term planning exists when it comes to managing stores. That's why it has been observed that approximately 2,000 milion taka are tied up at store for the following items:

Table 4.3: Capital tied up at Store

Description of materials	Unit	Stock Status as of February, 2012	Projected Consumption for 18 months
<i>Conductor / Cable</i>			
AAC Wasp Insulated, 100sqmm	km	1038.057	459.278
ACSR Dog (bare), 100sqmm	km	1066.167	201.359
ACSR Merlin (bare), 170sqmm	km	421.316	30.03
Stay wire /Guy wire, 50mm ²	km	170.786	34.1
11KV Arial Bundle Conductor 3x120sq.mm +1x70sq. mm.	km	109.682	6.23
400V Arial Bundle Conductor 3x 120 + 1x70 sq. m m.	km	124.038	11.45
Linetap 7.30mm to 11.17mm	no	405996	5899
Wedge Clamp	no	79200	1000
<i>Cable Kits</i>			
Bundle Conductors accessories			

Description of materials	Unit	Stock Status as of February, 2012	Projected Consumption for 18 months
Large angle assembly	set	11288	2288
Dead end assembly	set	8403	1089
Wire grip come along	no	258	58
Stainless steel strap	km	85.283	5.555
Stainless steel bundles(buckles)	no	155006	15322
11Kv Ariel Bundle Conductor Accessories			
Suspension Assembly	set	3035	246
Dead End Tension Assembly	set	1052	119
Double Tension Assembly.	set	531	28
Insulated Overhead Line Jointing Assembly.	set	109	9
Insulated Tee-Off Assembly/Cable Brunching	set	109	9
Insulated Tee-Off Assembly with U/G Cable/Cable Brunching	set	109	9
Overhead to Pole Mounted Transformer Assembly.	set	659	59
Bind Cap	no	1099	99
Plug in Termination	set	318	18
Overhead Bundle Cable Collar	no	10987	987
Plug in Tee-Off Termination	set	328	28
400V Ariel Bundle Conductor Accessories		0	
Suspension/Small Angle Assembly	no	5038	696
Insulated Tension Connector 120/120mm2 for Phase Conductor.	no	9900	900
Insulated Service Tee-Off Connector 95-120/1-35mm2	no	61435	2185
Service Cables		0	
BYA - 1x25 rm	km	20	0
Pole			
Steel pole 12 m 350 daN	no	2342	661
SPC Pole 15m (C-type)	no	1043	270
SPC Pole 12 m (B-type)	no	3229	1219
12M 300 daN SPC Pole	no	7117	1890
12M 400 daN SPC Pole	no	1502	237
Pole fittings		0	
Side Mount Bracket	no	21749	10804
Nut, bolt with washer, 5/8"x2.5"	no	64201	30913
Nut, bolt with washer, 10".	no	23278	1022
Anchor Rod	no	39056	10759
Anchor plate	no	38946	10639
Guy Thimble	no	74957	18157
Extension strap for guy	no	37923	8003
Earthing Rod	no	15906	2654
Half stud clamp	no	49315	0

Description of materials	Unit	Stock Status as of February, 2012	Projected Consumption for 18 months
Full Band	no	17850	1511
12" Nut & Bolt	no	23176	1624
Insulator			
11kv Pin Insulator with Pin	no	44554	19190

DESCO could not able to generate much better because of the following reasons:

- Excess holding stocks
- Some of the materials are obsolete, damaged and of no use.
- Opportunity costs.
- Lack of long term, medium term and short term planning at stores
- No link between procurement activities and store activities

4.4.6 Coding System of Store at DESCO

Coding System exists at store management. But it is not effective at all. The only utilization of Coding System of stock item is to understand the updates of stores. This existing coding system is not comprehensive and therefore Store Management could not get full benefit of it. Coding system principles were not maintained. That's why when an new item appears, Store Management sometimes fail to locate the right code.

4.4.7 Security Details at DESCO

As the goods kept at Stores are high value in nature, there is a wide range of potential theft opportunities both internal and external to DESCO. But proactive security measures are not prevailing at DESCO which is a major concern. Security risks are not assessed carefully. Consequently prevention policy has not been developed yet regarding security issues.

Table 4.2: Security Details of DESCO

Sl. No	Store Name	Security Guards	
		Internal Security Guards	External Security Guards (from ISS Security Guards)
1	Central Store, Mirpur	01 nos Security Guard. However, Central Store is the main office for Store Management where Manager and others staffs are deployed	07 nos
2	Mirpur-12, DOHS	Nil	02 nos
3	Mirpur-12, Store Yard	Nil	Nil
4	Agargaon Store Yard	Nil	Nil
5	Majar Road, Mirpur-01	Nil	05 nos
6	Mirpur-14, Store Yard	Nil	
7	Bashundhara Grid	Security Guards of Bashundhara Grid are advised to look after the store items	Nil

8	Uttara Grid	Security Guards of Uttara Grid are advised to look after the store items	Nil
9	Uttara-12 Balur Math	Nil	Nil
10	Uttara-14 Store Yard	Nil	03 nos
11	Dakshinkhan Substation Store Yard	Security Guards of Dakshinkhan Substation are advised to look after the store items	Nil
12	Kaderia Math-01, Tongi	An Office Assistant is deployed to supervise the external security guards	12 nos
13	Kaderia Math-02, Tongi	An Office Assistant is deployed to supervise the external security guards	04 nos
14	Mill Gate, Substation-03, Tongi	03 nos	04 nos
15	Substation-01, Tongi	Nil	Nil
16	BISIC Substation, Tongi	Security Guards of BISIC Substation are advised to look after the store items	Nil
17	Purbachol Store Yard	Nil	04 nos

4.4.8 ICT and its function

Only officers of stores have the access to use internet. Tally software is being operated at stores with inadequate information. Therefore, store management has limited access of modern ICT blessings to operate more efficiently and effectively. In addition to that some of the staffs are not efficient in using computer and tally software which is indeed a major concern for store management.

CHAPTER-5

ANALYSIS OF THE RESULTS

5.1 Foreword

This chapter includes the analyzed result and discussions on the findings of existing performance of DESCO Store Management and discussions on how the respondents assess the existing system of store management

5.2 Characteristics of the respondents

To conduct the survey, the questionnaires were distributed among 30 respondents. Out of 30, a total of 24 questionnaires were returned from the respondents in which 2 were left blank or partially filled up, which were screened out for analysis. Finally, a total of 30 completely filled-up questionnaires have been considered for further analysis. The overall response rate is 80%, which is quite satisfactory. As the sampling was chosen through convenient sampling method and the survey was done by the researcher through self-administered process, the response rate is quite satisfactory. Respondents are direct employee of the Company and have direct communication with the researcher and they also have much interest in improving the existing performance of Store Management. The respondents profile can be seen at a glance below:

Table-5.1: Respondents' Profile

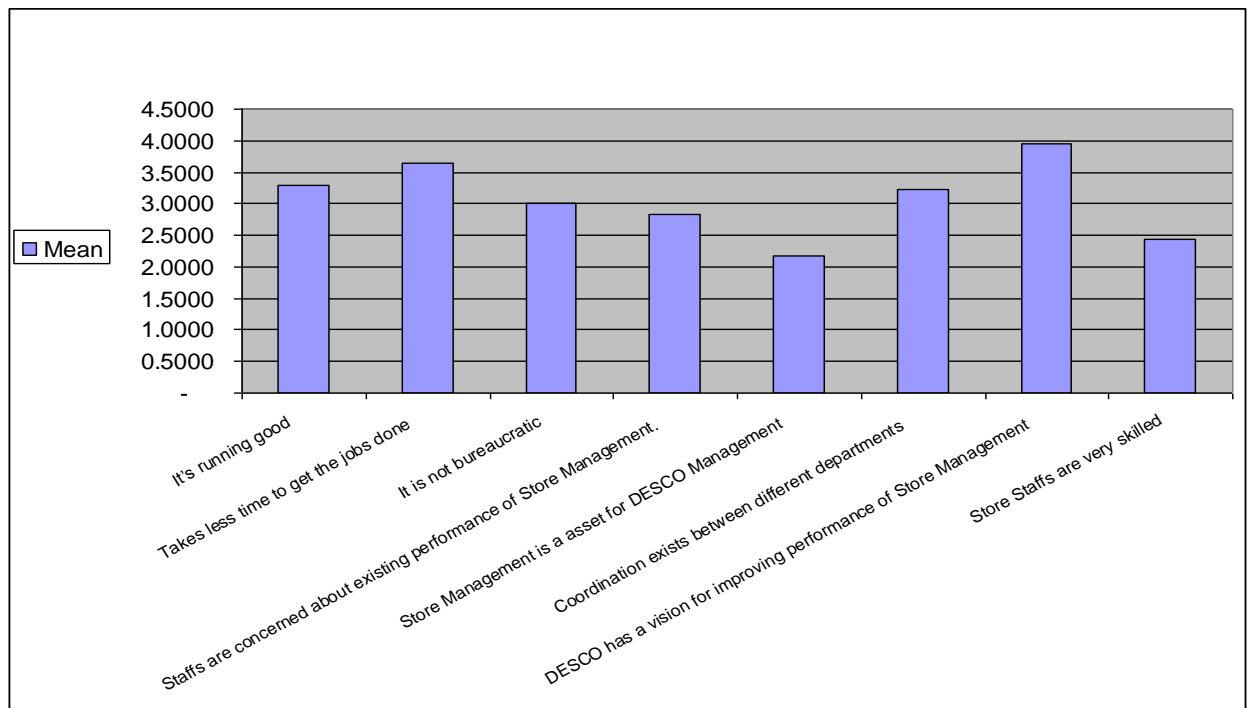
Particulars	Variables	No. of respondents	% of total respondents	Total effective participants
Position	MD/Directors	1	4%	24
	DGM to GM	5	21%	
	AM to Manager	14	58%	
	Service Staffs	4	17%	
Sex	Male	23	96%	24
	Female	1	4%	
Length of service	More than 10 years	4	17%	24
	3 to 10 years	16	67%	
	Below 3 years	4	17%	
Education	Post Graduate	17	71%	24
	Graduate	6	25%	
	Below Graduate	1	4%	
Age Group	Above 45 years	6	25%	24
	30 to 44 years	15	63%	
	Below 30 years	3	12%	

5.3 Respondents views on General Perception and attitude of Store Management

It has been observed from the respondents' view that in general the performance of existing store management is not that much satisfactory. Many of the respondents give their opine of Store Management of DESCO as bureaucratic, take more time to get the jobs done, not running up to the mark, less skilled people are working here, no vision at all for Store Management etc.

It is found that coordination is absent among different divisions and departments to get the jobs done smoothly and without hindrance and therefore store management takes long time. Again, as DESCO is a public limited company, employees blame organization's "bureaucracy" on senior management. Existing structures discourage creativity and innovation throughout the store management. Organizations bound by rigid controls also find store management less able to adapt to changing conditions in the marketplace, industry or legal environment.

Figure 5.1: General Perception and attitude of Store Management

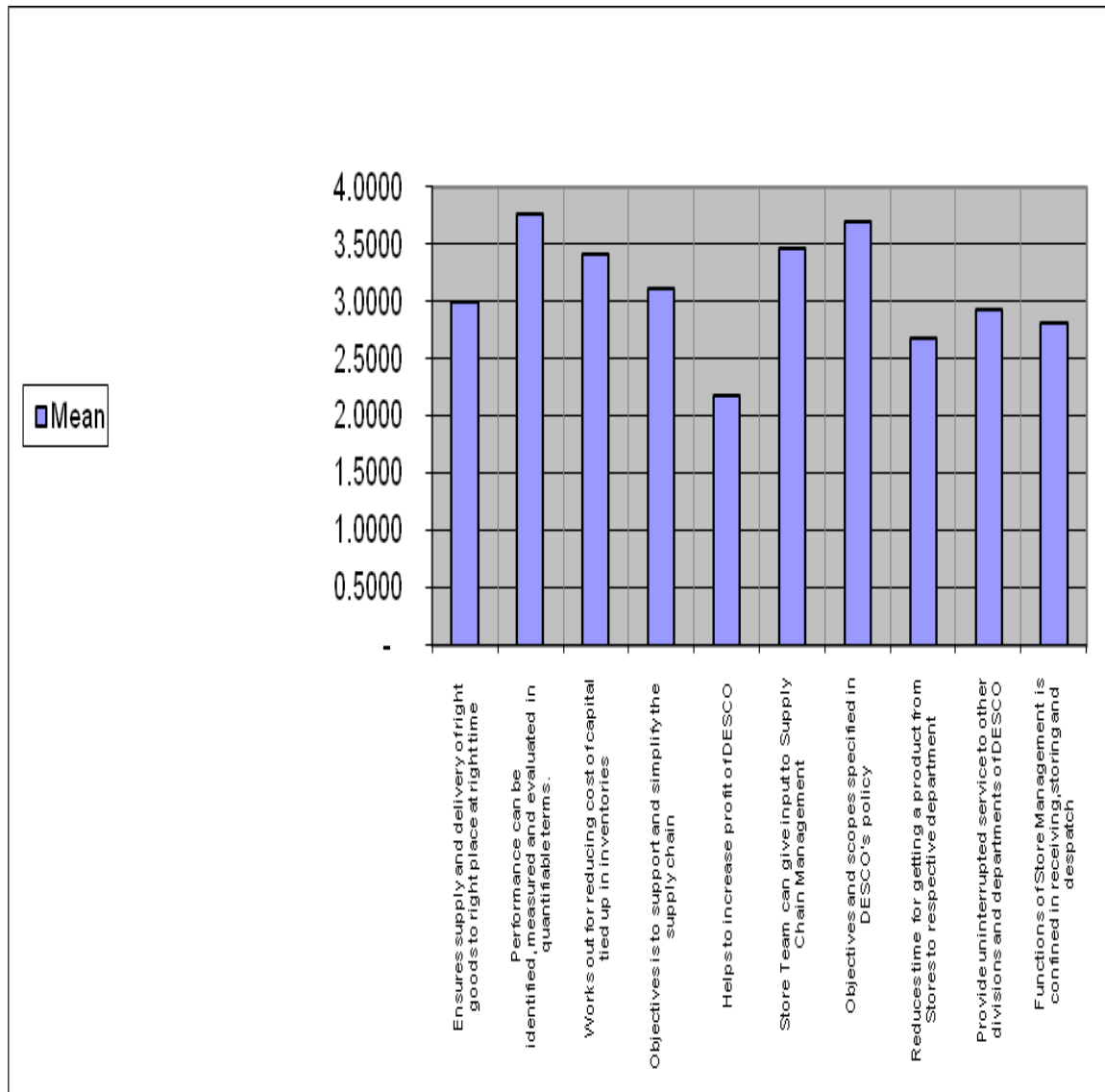


5.4 Respondents views on Objectives and Scope of DESCO's Store Management

Effective supply chain management is all about delivering the right product in the right quantity and in the right condition with the right documentation to the right place at the right time at the right price. But according to the respondents' view, it is absent in existing system. Performance can not be identified, measured and evaluated in quantifiable term in this system. Many of the respondents opine Store Management of DESCO as loss centre.

From the table 5.3 it is found that functions of store management is not broad, other divisions and departments are frequently getting interrupted service from store, objectives and scopes are not specified in DESCO's policy properly. It is observed from the respondents' view that as there is no clear cut objective and scope specified in DESCO's policy and procedures for Store Management, it fails to quantify and specify its limit of works and it also fails to gain the importance from other divisions and departments of DESCO.

Figure 5.2: Objectives and Scope of DESCO's Store Management

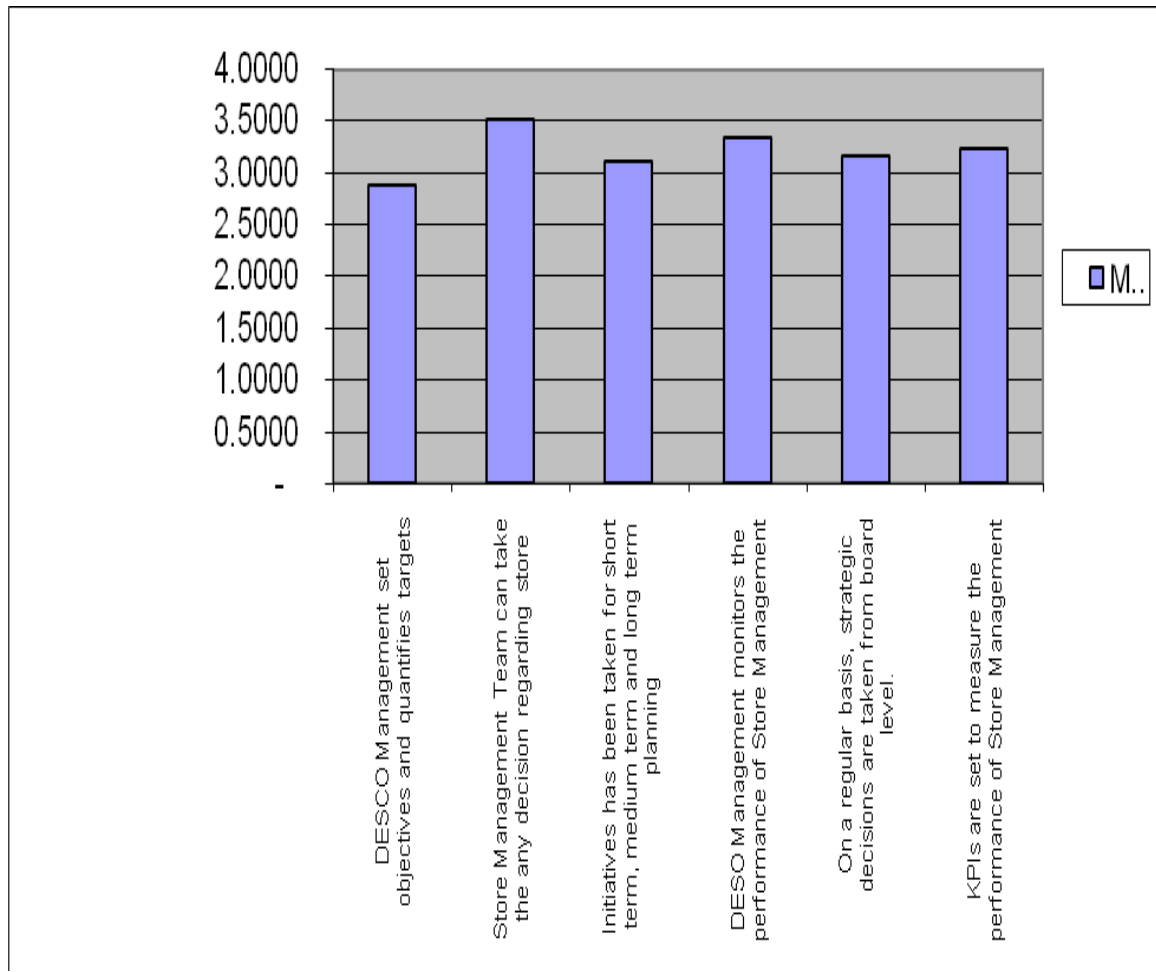


5.5 Respondents views on evaluating strategic factors

Strategy requires the matching of resources to requirements. Storage and distribution require long-term planning to be fully effective. Entire logistics design should be viewed as long term. Strategic plans cannot always be made over a short time period. But according to the respondents' view, long term planning is absent in existing system rather store works is done in ad hoc basis. Still now DESCO Management don't take any initiative for short term, medium term and long term plan for improving the performance of Store Management.

The word key performance indicator is not very familiar to the respondents as well as store related people. Sometimes DESCO Management fails to monitor the performance of store management which is a serious concern.

Figure 5.3: Evaluate the strategic factors affecting the choice of Store Management

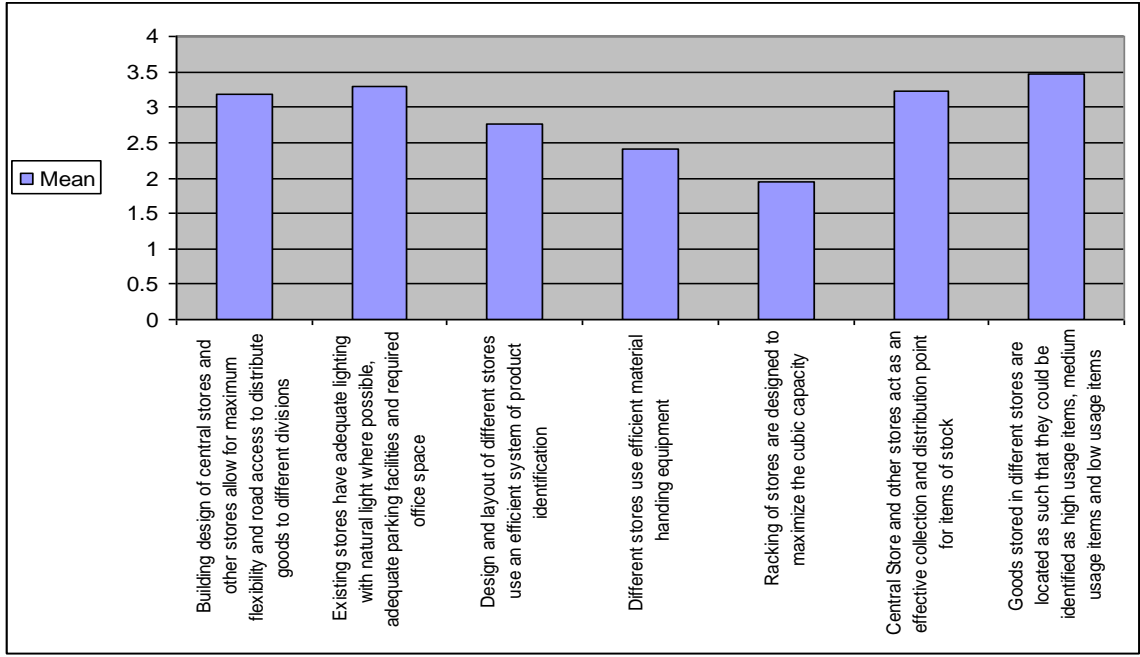


5.6 Respondents views on role and effects of different stores of DESCO

The role of the store management is far greater than just storage. Store management perform an enhanced role within the logistics process and are an integral part of delivering service to the user end. But according to the observation of the respondents', existing stores fail to fulfill the same. It is found that building design is not allowing maximum flexibility and road access to distribute goods to different divisions.

According to the respondents' view, existing stores neither have adequate lighting facilities nor have efficient system of product identification. It is found that Store Management hardly understand the importance of efficient material handling equipment and racking of stores. Again it has been observed that the concept of high usage items, medium usage items and low usage items for storing the goods is not well perceived by the respondents'.

Figure 5.4: Appraise and evaluate the role and effects of different stores at DESCO

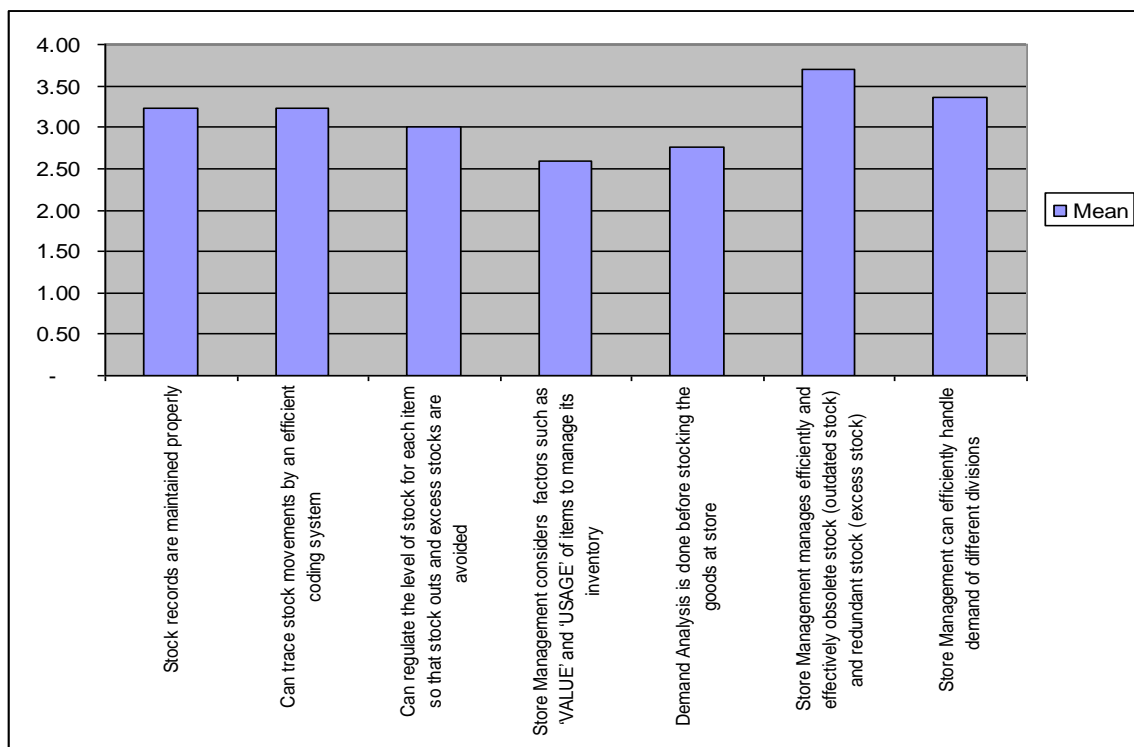


5.7 Respondents views on Inventory Management of DESCO

For efficient operation of the store management and to provide adequate controls over stock, an efficient inventory management is essential. As far as Inventory Management is concerned, the respondents' give their poor assessment. According to them stock records are not maintained properly. In addition, respondents' don't consider store management factors such as 'VALUE' and 'USAGE' of items to manage its inventory. It is found from respondents' view that demand analysis is precipitously absent before stocking the goods at store and store management does not manage efficiently and effectively obsolete stock and redundant stock.

It is found from respondents' view that demand analysis is precipitously absent before stocking the goods at store and store management does not manage efficiently and effectively obsolete stock and redundant stock.

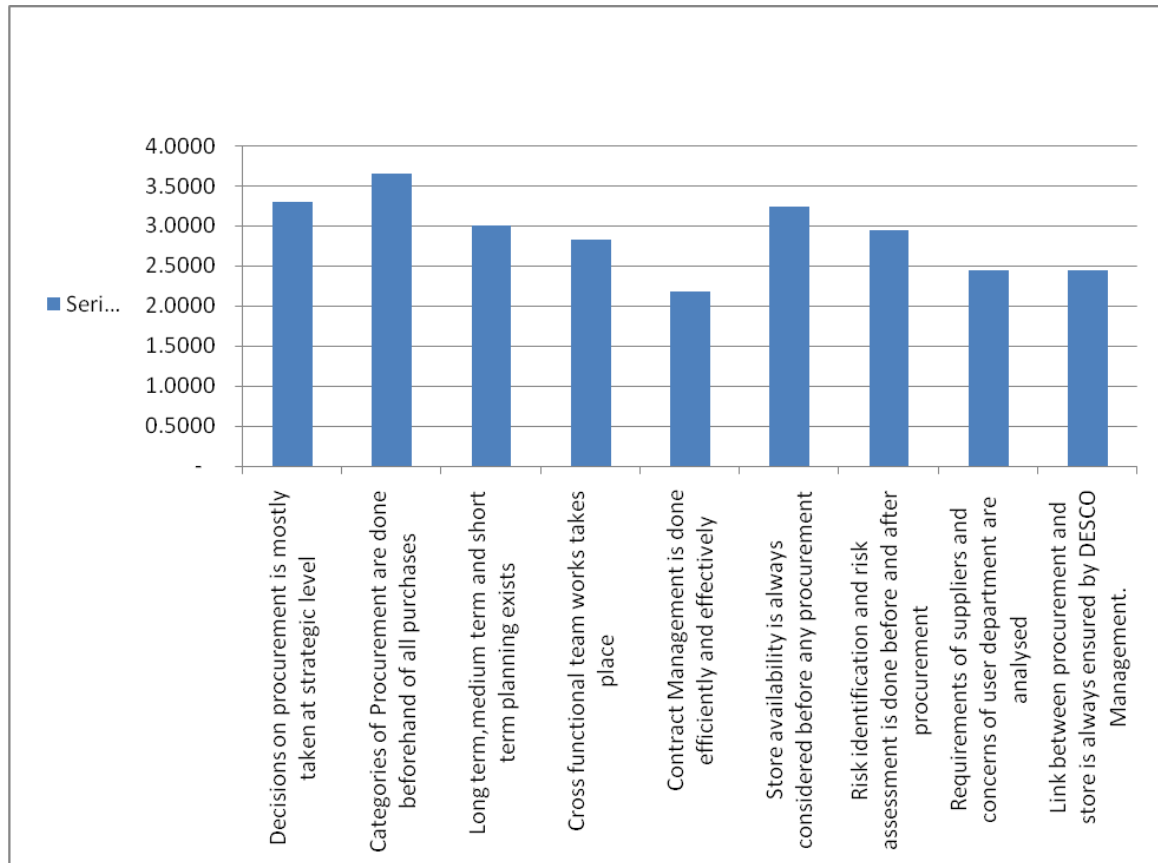
Figure 5.5: Assess Inventory Management of DESCO



5.8 Respondents views on Procurement Practice at DESCO

Procurement practice is very vital for improving store performance of DESCO. But as per respondents' views, it is sometimes seen as cumbersome or bureaucratic. According to them it sometimes fails to save time by not ensuring right solution to meet business needs. They also gave opine that sometimes right price is not ensured as well as the process overlooks vital steps.

Figure 5.6: Procurement Practice at DESCO

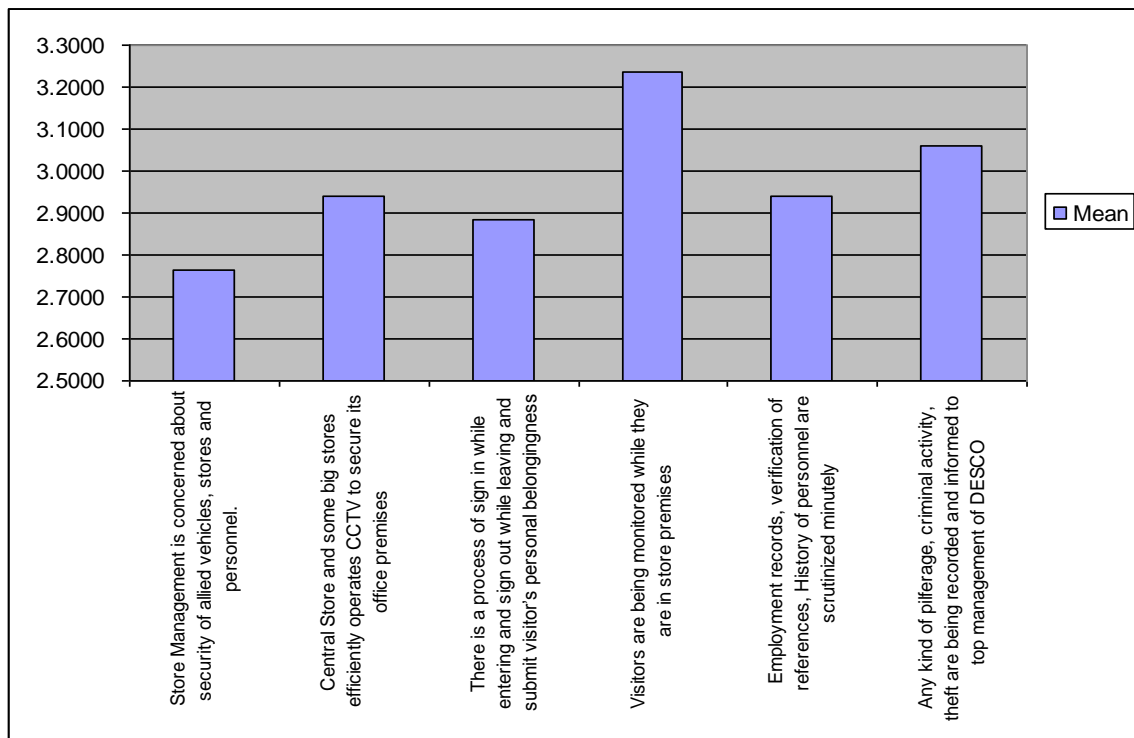


It is found from the respondents' views that long term, midterm and short term planning is marginally missing while categories of procurement are not always done beforehand of all purchases. In addition, contract management before and after the procurement process need to improve in some significant areas. Again respondents' gave their anxieties in maintaining link between procurement and store.

5.9 Respondents views on security in different stores of DESCO

All goods have a value and are subject to criminal activity. Crimes against vehicles and property continue to grow so distribution and warehousing staff must be fully aware of the security risk of their products, transport and support equipment in order to take steps to guard against breaches of security. But as far as security is concerned, respondents' give very harsh views.

Figure 5.7: Examine and analyse security in different stores of DESCO



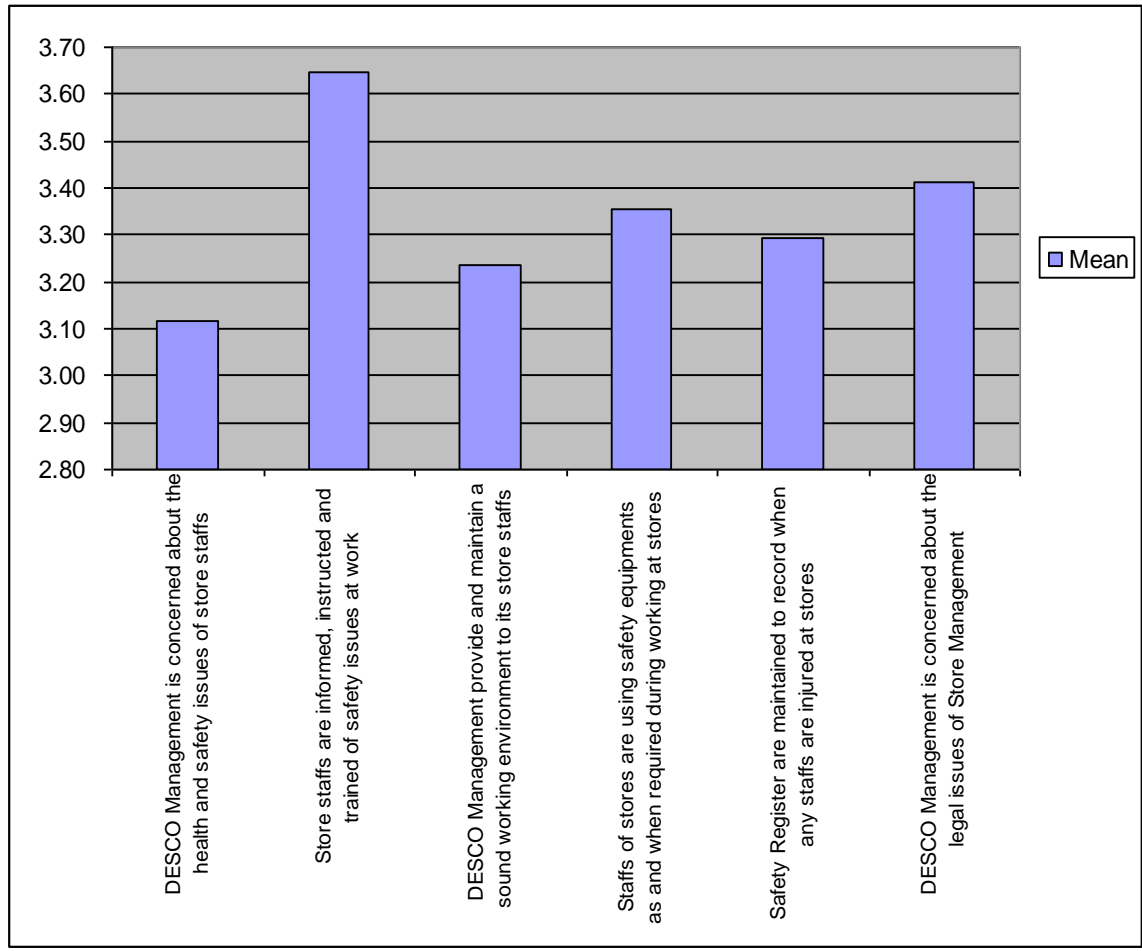
According to the respondents' views, no strictly maintained security measures are being followed at different stores of DESCO. Security measures like CCTV, employment records, verification of references, history of personnel are not minutely maintained appropriately. In addition, record management related to stores is also not sound at all.

5.10 Respondents views on health and safety and legal issues involved in Store Management

Safety within store management is an integral part of the operation. Safety is recognised as a priority. However, respondents' don't think DESCO Management's concern on health and safety issues of store staffs. According to them, Store Staffs are not properly trained and informed of safety issues at work and Management is also not providing and maintaining a sound working environment that is safe and without risk to health of its store staffs.

It seems that Store Management is not concerned as it should be the personal protective equipment like helmets, gloves, eye protection, high visibility clothing, and safety footwear, safety harnesses as and when required during working at stores. Sometimes legal issues of Store Management are also ignored by top management. Again, importance of Safety Register is ignored by Store Management.

Figure 5.8: Examine health and safety and legal issues involved in Store Management

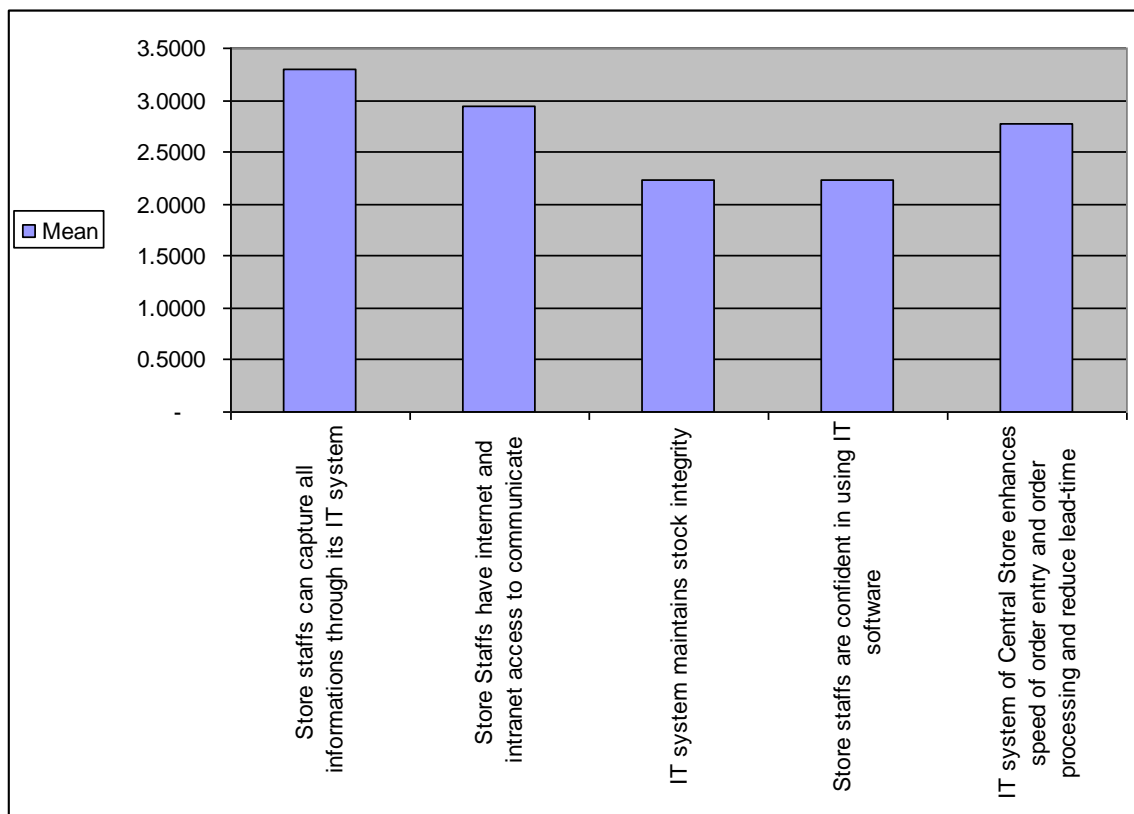


5.11 Evaluate the use of information and Communication Technology at Central Store

Store Management personnel have greater demands placed on them than ever because of their role in supply chains and their interface with the end user. To operate effectively, store management requires a fast, flexible and accurate IT system to provide required information to any number of end users. Respondents' don't think Store staffs can capture delivery information, record stock movements, maintain stock balance, monitor utilization, track the movement of goods through the system, sort order requirements through its IT system

All store related staffs are not getting Internet facilities. As far intranet is concerned, store staffs are overlooked. Tally Software is practiced to see the stock updates but this software is not providing information like recording and identifying damage, recording deterioration, stock rotation. Some of the store staffs don't even operate computer aptly and therefore, speed of order entry and order processing don't reduce lead time.

Figure 5.9: Evaluate the use of ICT at Central Store



CHAPTER-6

<p>CONCLUSION & RECOMMENDATIONS</p>
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6.1 Introduction

DESCO's stores and spares stand almost two-fifth of the shareholder's equity. Yet top management of DESCO give very little importance on Store Management. In recent days, physical storage and distribution has crucial roles to play for the organisation and it can act as a profit centre for the organisation. Till date Store Management is considered as cost centre by top management of DESCO.

This chapter includes the conclusions and recommendations that would help in improving the existing performance of Store Management of DESCO.

6.2 Recommendations

This part of the thesis concludes the recommendations on main findings as following:

6.2.1 Organisation and management

There should be adequate number of competent personnel involved in all stages of Store Management. A designated person or at least an Internal Security Guard should be appointed at each store. Individual responsibilities should be clearly defined and understood by the individuals concerned and recorded as written job descriptions. Certain activities may require special attention such as the supervision of performance of activities, in accordance with company policy.

6.2.2 Personnel Management

The lack of basic skills training is undoubtedly partially responsible for some of operational accuracy issues being currently encountered. A training needs analysis of store related staffs should be undertaken. After that all personnel involved in store management (both internal and external staffs) should be trained. Records of all trainings should be kept not only in Human Resource Management but also in Store.

6.2.3 Store Management Strategy

Store Management of DESCO requires long-term planning to be fully effective. Planning should include setting objectives, quantifying targets for achievement and communicating these targets to others. This process incorporates selecting strategies, tactics, policies, programmes and procedures for achieving the objectives.

DESCO Management should determine vision, mission and objectives of store management.

After that initiatives should be taken for short term, medium term and long term plan.

Strategic Planning of DESCO will take a longer time frame with a horizon of five years or more, and will consider the longer-term allocation of resources and adopt a time frame where all resources are variable. In Strategic Planning, the following issues will be examined:

- Number and location of stores
- Changes in transport mode
- Effective use of internet and intranet in store and required software
- Third party outsourcing

- Stockholding policy

Tactical Planning would consider a six-month to two-year timeframe, seeking to implement strategic plans effectively. In Tactical Planning, the following issues need to be examined:

- Transport (Vehicles: type, numbers, size, configuration, routing, staffing)
- Warehouse (design, layout, space allocation, equipment)
- Administration/Information (Stock control and location, order processing and procedures, monitoring implementation and support systems)

Operational Planning considers the day-to-day decision-making involved in storage and distribution. Operations are controlled and monitored against expected standards and rules. Key Performance Indicators (KPIs) should be set in the following areas to improve day-to-day store performance:

- Goods receipts and checking
- Order picking and packing
- Order Lead Time
- Stock Availability in the warehouse
- Percentage of Orders completed on time
- The value of order completed
- Customer Service

6.2.5 Safety Measures

Personnel working at Store Management should be given specific training to handle the goods and conversant to store environment.

6.2.6 Security

Procedures and conditions of employment for external security guards must be designed and administered to assist in minimizing the possibility of accessing unauthorized possession. In this regard precautions must be taken to prevent unauthorized persons from entering storage areas.

Hence, CCTV should be hanged some of the stores after analysing its requirement. In addition, security measures like employment records, verification of references, and history of personnel should be minutely maintained. Besides, toilets and rest areas should be positioned so as to ensure that drivers do not enter into inventory. Procedures should be place to ensure visitors in stores Sign In, Carry Identification Tags, Visitors are monitored while their visiting and Sign out on leaving.

6.2.7 Premises, Warehousing and Storage

Storage areas of DESCO should be of sufficient capacity to allow the orderly storage of the various categories goods. In this regard, store staffs should analyse and work for designing store areas to ensure good storage conditions. In particular, store areas should be clean and dry and maintained within acceptable temperature limits. Storage areas should be clean, and free from accumulated waste and vermin. Storage areas should provide adequate lighting to enable all operations to be carried out accurately and safely

Heavy items such as conductor and cables, transformers should be separated from light/small items. A committee should form to analyse and determine high usage items, medium usage items and low usage items of DESCO, to separate heavy items and light items, to determine optimum utilisation of storage areas. DESCO Management might adopt *“Inverter T” system (Figure: 4.5)* in its stores to meet long-term storage objectives.

A comprehensive survey of existing material handling equipment is recommended. After the survey, DECO Store Management will get an overview of the requirement of how many equipments they need to procure. Again defective vehicles and equipment should not be used, and should either be removed or labelled as such.

6.2.8 Dispatch

Goods should only be distributed to persons or entities that are entitled to acquire such products in terms of applicable legislation. Written proof of such authority must be obtained prior to the dispatch of products to such person or entities. The dispatch and transport of goods should be commenced only after the receipt of a valid delivery order or material replenishment plan which should be documented. Written procedures for the dispatch of goods should be established. Such procedures should take into account the nature of the goods, as well as any special precautions to be observed. Records for the dispatch of goods should be prepared and should include at least the following information:

- Date of dispatch;
- Name and address of the entity responsible for the transportation
- Name, address and status of the users (e.g. department);
- Quantity of the goods
- Applicable transport and storage conditions; and
- A unique number to allow identification of the delivery order.

It is recommended that goods in transit must be accompanied by the authorised person (internal staffs) of DESCO with appropriate documentation.

6.2.9 Use of ICT

The expanded store activity should be managed in an integrated manner as opposed to being viewed as isolated components of activity. This can be managed by some extended features which need to be added. Features like delivery information, record stock movements, maintain stock balance, monitor utilization, track the movement of goods through the system, sort order requirements, recording and identifying damage, recording deterioration, stock rotation may be included in the tally software or any other advanced management software which can include such features. All store related staffs are not getting Internet facilities. Store staffs should be covered by both internet and extranet facilities. DESCO IT system should be integrated in such a way that it could generate document, automate warehouse goods retrieval applications, generate automate report etc. As some of the staffs are not efficient in using computer and tally software, they should be given necessary training.

6.2.10 Documentation

Documents, in particular instructions and procedures relating to any activity that could have an impact on the quality of goods, should be designed, completed, reviewed and distributed with care. The title, nature and purpose of each document should be clearly stated. The contents of documents should be clear and unambiguous. Documents should be laid out in an orderly fashion and be easy to check. All documents should be completed, approved, signed (as required) and dated by an appropriate authorized person(s) and should not be changed without the necessary authorization. Documents should be reviewed regularly and kept up to date. Where the records are generated and kept in electronic form, their back-ups should, be available to prevent any accidental data loss.

6.2.11 Disposal of Goods

Damaged or obsolete goods of store should be appropriately identified and handled in accordance with a procedure which involves at least the physical segregation of such goods in a dedicated area in order to avoid confusion and prevent distribution until a decision has been taken by top management of DESCO with regard to their disposition. The necessary assessment and decision regarding the disposition of such goods must be taken by an authorized committee. The nature of goods, any special storage conditions required, its condition and history and the time elapsed since it was issued, should all be taken into account in this assessment. Goods should be destroyed where necessary in accordance with international, national and local requirements regarding disposal of such goods, and with due consideration to protection of the environment.

6.2.12 Implementing an effective coding system

Store Management of DESEO should introduce a new coding system. In this new coding system each code should be unique and certain. Each item should have only one possible code number that can be easily identified from the structure of the code. The coding system should be comprehensive and flexible, ie it should be possible to identify a code number for every item. The coding system should be capable of expanding to accommodate new items. The code should be as brief as possible, having regard to the amount of detail needed in any analysis of items that may need to be performed. The coding system should be centrally controlled. It should not be possible for individuals independently to delete codes or add new codes to an existing system.

6.2.13 Annual Procurement Plan

In order to minimize excess holding stock, it is recommended to implement a précised Annual Procurement Policy at DESCO for all types of procurement beforehand of the financial year begins. The Annual Procurement Policy should be in accordance with best practice as outlined in Public Procurement Act-2006 and Public Procurement Regulation-2008.

Therefore, an annual procurement plan is prepared in Table 6.1 to link procurement activities with that of stores. During preparation of the APP 2012-13, the followings have been taken into consideration:

- Store statement and stock level of store item(s) in DESCO's Central Store upto February-2012.
- Consumption pattern of each store item(s) for the last 02(two) years.
- Relevant tender documents of last 05 (five) years to obtain necessary information.
- Tender proceedings of last 18 (eighteen) months to determine the projected completion period.
- Requirements of each of the Departments and Divisions of DESCO.

The purpose of Annual Procurement Plan 2012-13 is to provide information about the purchase of goods and services, type of procurement method, source of fund, estimated cost of the procurement, expected time for tender float, tender evaluation, tentative time schedule for completion of contract and some other graphical presentation of procurement process beforehand the actual procurement. If Annual Procurement Plan is done every financial year then DESCO will be able to minimize capital tied up, ensure better procurement practice and link their procurement activities with that of store.

Table 6.1: Annual Procurement Plan for the Financial Year
2012-13

Sl. No	Description of Procurement Package	Procurement Method	Type of Tender	Lot No	Source of fund	Approving Authority	Estimated Cost (Million Tk)	Award of contract	Tentative Completion Date
1	Procurement of Single Phase Electronic KWHr Meter	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Board	80.00	December, 2013	March, 2013
2	Design, supply, installation and augmentation of 33/11 KV Substations on Turnkey Basis	Open Tendering Method	Single Stage Two Envelop	Lot 1 Lot 2	DESCO	DESCO Board	1,770.00	January, 2013	July, 2014
3	Civil Construction works and interior re-arrangement works in Pallabi S&D Buildings	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	5.00	October, 2012	June, 2013
4	Procurement of 11 KV Underground Cable Line and 33 KV Underground Cable Line	Open Tendering Method	Single Stage Two Envelop	Lot 1 Lot 2	DESCO	DESCO Board	1,959.62	January, 2013	July, 2013
5	Procurement of works and services of Commercial Operation and Support Services (COSS)	Open Tendering Method	Single Stage Two Envelop	Lot A to Lot Q	DESCO	DESCO Board	250.00	January, 2013	March, 2015
6	Procurement of Transformer Protection Equipments	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	17.10	February, 2013	June, 2013
7	Procurement of Three Phase Whole Current Electronic KWHr Meter	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	20.00	February, 2013	April, 2013
8	Procurement of Single Phase and Three Phase Transformers	Open Tendering Method	Single Stage Two Envelop	Lot 1 Lot 2	DESCO	DESCO Board	42.50	February, 2013	August, 2013
9	Civil Construction works for extension of Aftabnagar 33/11 KV Substation Control Building (2nd to 5th Floor)	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	10.00	December, 2012	August, 2013
10	Procurement of HT Metering Unit	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Board	112.85	February, 2013	June, 2013
11	Civil Construction works and interior re-arrangement works in Baridhara S&D Buildings	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	5.00	December, 2012	August, 2013

12	Procurement of 11 KV & 33 KV Cable Kits	Open Tendering Method	Single Stage Two Envelop	Lot 1 Lot 2	DESCO	DESCO Management	18.80	March, 2013	September, 2013
13	Procurement of 11 KV Switching Station at Paikpara, Aftabnagar and BAT BC	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	4.50	April, 2013	October, 2013
14	Procurement of Power Transformer at Baridhara SS Substation	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Board	350.00	April, 2013	October, 2013
15	Procurement of Cable Accessories	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Board	24.24	April, 2013	October, 2013
16	Barua Land Development works with construction of retaining and boundary wall	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	20.00	February, 2013	October, 2013
17	Consultancy services for design of Head Office Complex at Uttara	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Board	37.00	February, 2013	June, 2013
18	Civil Construction works of Agargaon Office Building	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	15.00	February, 2013	March, 2014
19	Procurement of CNG Driven Rental Microbus (for office usage)	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	20.00	February, 2013	March, 2014
20	Civil Construction works of Dakshinkhan Office Building	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Board	45.00	April, 2013	December, 2013
21	Procurement of Electricity Bill Format and Clearance Certificate	Open Tendering Method	Single Stage Two Envelop	Lot 1 Lot 2	DESCO	DESCO Management	4.00	March, 2013	May, 2013
22	Procurement of Motor Vehicle (Sedan Car) for DGM and S&D Managers	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	20.00	March, 2013	May, 2013
23	Procurement of 400 Volt CT Operated Metering Unit and Accessories	Open Tendering Method	Single Stage Two Envelop	Lot 1 Lot 2	DESCO	DESCO Management	16.25	May, 2013	September, 2013
24	Procurement of 01 (one) nos of 4-wheel drive jeep for Director	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	20.00	April, 2013	June, 2014
25	Civil Construction works and interior rearrangement works in Uttara S&D Building	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	5.00	May, 2013	June, 2014
26	Procurement of meter	Open	Single		DESCO	DESCO	15.00	September,	January,

	security seal	Tendering Method	Stage Two Envelop			Management		2013	2014
27	Procurement of Preform, Cable Kits and Service Cables	Open Tendering Method	Single Stage Two Envelop	Lot 1 Lot 2	DESCO	DESCO Management	17.23	September, 2013	March, 2014
28	Procurement of Single Phase and Three Phase Transformers	Open Tendering Method	Single Stage Two Envelop	Lot 1 Lot 2	DESCO	DESCO Management	42.50	September, 2013	March, 2014
29	Procurement of transformer accessories	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	5.40	October, 2013	April, 2014
30	Procurement of transformer repair materials	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	2.10	October, 2013	April, 2014
31	Procurement of Ring Main Unit (RMU)	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Board	47.00	October, 2013	April, 2014
32	Procurement of network and networking accessories	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	6.56	June, 2013	October, 2013
33	Supply of 11KV Capacitor Bank with accessories	Open Tendering Method	Single Stage Two Envelop		DESCO	DESCO Management	16.00	November, 2013	April, 2014
34	Repair and maintenance works of Central Store Sheds	Request For Quotation/ Direct Procurement Method	Single Stage Two Envelop		DESCO	DESCO Management	2.00		
35	Procurement of Transformer Oil	Direct Procurement			DESCO	DESCO Management	4.80		
36	Procurement of Furniture/Fixtures	Request For Quotation/ Direct Procurement Method			DESCO	DESCO Management	3.69		
37	Procurement of equipments for official usage	Request For Quotation/ Direct Procurement Method			DESCO	DESCO Management	7.52		
38	Procurement of Computer and Peripherals	Request For Quotation/ Direct Procurement Method			DESCO	DESCO Management	7.77		
39	Procurement of toner/catridge	Request For Quotation/ Direct Procurement Method			DESCO	DESCO Management	5.50		

Fig.6.1: Annual Procurement Plan for the Financial Year 2012-13 shown in Graphical Format

Sl. no	Description of Procurement Package	July 12	Aug 12	Sep 12	Oct 12	Nov 12	Dec 12	Jan, 13	Feb 13	Mar 13	Apr 13	May 13	June 13
1	Procurement of Single Phase Electronic KWHr Meter	Preparation of document to Award of contract						Contract Execution					
2	Design, supply, installation and augmentation of 33/11 KV Substations on Turnkey Basis	Invitation of Bid to Award of contract						Contract Execution (tentative completion date is July, 2014)					
3	Civil Construction works and interior re-arrangement works in Pallabi S&D Buildings	Invitation of Bid to Award of contract				Contract Execution							
4	Procurement of 11 KV Underground Cable Line and 33 KV Underground Cable Line	Invitation of Bid to Award of contract						Contract Execution					
5	Procurement of works and services of Commercial Operation and Support Services (COSS)	Invitation of Bid to Award of contract						Contract Execution (Contract will be two years starting from February, 2013 to January, 2015)					
6	Procurement of Transformer Protection Equipments	Docu ment preparation and approval	Invitation of Bid to Award of contract						Contract Execution (tentative date of completion is August, 2013)				
7	Procurement of Three Phase Whole Current Electronic KWHr Meter	Docu ment preparation and approval	Invitation of Bid to Award of contract						Contract Execution				
8	Procurement of Single Phase and Three Phase Transformers	Docu ment preparation and approval	Invitation of Bid to Award of contract						Contract Execution (tentative date of completion is August, 2013)				
9	Civil Construction works for extension of Aftabnagar 33/11 KV Substation Control Building (2nd to 5th Floor)	Docu ment preparation and approval	Invitation of Bid to Award of contract						Contract Execution (tentative date of completion is December, 2013)				
10	Procurement of HT Metering Unit	Docu ment preparation and approval	Invitation of Bid to Award of contract										
11	Civil Construction works and interior re-arrangement works in Baridhara S&D	Document preparation and approval	Invitation of Bid to Award of contract						Contract Execution (tentative date of completion is August, 2013)				

Sl. no	Description of Procurement Package	July 12	Aug 12	Sep 12	Oct 12	Nov 12	Dec 12	Jan, 13	Feb 13	Mar 13	Apr 13	May 13	June 13
	Buildings												
12	Procurement of 11 KV & 33 KV Cable Kits			Document preparation and approval	Invitation of Bid to Award of contract					Contract Execution (tentative date of completion is September, 2013)			
13	Procurement of 11 KV Switching Station at Paikpara, Aftabnagar and BAT BC			Document preparation and approval	Invitation of Bid to Award of contract					Contract Execution (tentative date of completion is October, 2013)			
14	Procurement of Power Transformer at Baridhara SS Substation			Document preparation and approval	Invitation of Bid to Award of contract					Contract Execution (tentative date of completion is October, 2013)			
15	Procurement of Cable Accessories			Document preparation and approval	Invitation of Bid to Award of contract					Contract Execution (tentative date of completion is October, 2013)			
16	Barua Land Development works with construction of retaining and boundary wall			Document preparation and approval	Invitation of Bid to Award of contract		Contract Execution (tentative date of completion is October, 2013)						
17	Consultancy services for design of Head Office Complex at Uttara			Document preparation and approval	Invitation of Bid to Award of contract		Contract Execution						
18	Civil Construction works of Agargaon Office Building			Document preparation and approval	Invitation of Bid to Award of contract		Contract Execution (tentative date of completion is March, 2014)						
19	Procurement of CNG Driven Rental Microbus (for office usage)			Document preparation and approval	Invitation of Bid to Award of contract		Contract Execution (tentative date of completion is October, 2013)						
20	Civil Construction works of Dakshinkhan Office Building			Document preparation and approval	Invitation of Bid to Award of contract		Contract Execution (tentative date of completion is December, 2013)						
21	Procurement of Electricity Bill Format and Clearance Certificate			Document preparation and approval	Invitation of Bid to Award of contract		Contract Execution						
22	Procurement of Motor Vehicle (Sedan Car) for DGM and S&D Managers			Document preparation and approval	Invitation of Bid to Award of contract		Contract Execution						

Sl. no	Description of Procurement Package	July 12	Aug 12	Sep 12	Oct 12	Nov 12	Dec 12	Jan, 13	Feb 13	Mar 13	Apr 13	May 13	June 13
23	Procurement of 400 Volt CT Operated Metering Unit and Accessories				Document preparation and approval								Contract Execution (tentative completion date is September, 2013)
24	Procurement of 01 (one) nos of 4-wheel drive jeep for Director				Document preparation and approval								Contract Execution (tentative completion date is September, 2013)
25	Civil Construction works and interior re-arrangement works in Uttara S&D Building					Document preparation and approval				Invitation of Bid to Award of contract			Contract Execution (Completion will be June,14)
26	Procurement of meter security seal						Document preparation and approval						Invitation of Bid to Award of contract (tentative date of completion is January, 2014)
27	Procurement of Preform, Cable Kits and Service Cables						Document preparation and approval						Invitation of Bid to Award of contract (tentative date of completion is March, 2014)
28	Procurement of Single Phase and Three Phase Transformers						Document preparation and approval						Invitation of Bid to Award of contract (tentative date of completion is March, 2014)
29	Procurement of transformer accessories						Document preparation and approval						Invitation of Bid to Award of contract (tentative date of completion is April, 2014)
30	Procurement of transformer repair materials						Document preparation and approval						Invitation of Bid to Award of contract (tentative date of completion is April, 2014)
31	Procurement of Ring Main Unit (RMU)							Document preparation and approval					Invitation of Bid to Award of contract (tentative date of completion is April, 2014)
32	Procurement of network and networking accessories								Document preparation and approval				Invitation of Bid to Award of contract (tentative date of completion is October, 2013)

Sl. no	Description of Procurement Package	July 12	Aug 12	Sep 12	Oct 12	Nov 12	Dec 12	Jan, 13	Feb 13	Mar 13	Apr 13	May 13	June 13
33	Supply of 11KV Capacitor Bank with accessories									Document preparation and approval	Invitation of Bid to Award of contract (tentative date of completion is April, 2014)		
34	Repair and maintenance works of Central Store Sheds		Painting and other civil works will be done in the store buildings through RFQ within this time frame										
35	Procurement of Transformer Oil	Transformer Oil will be procured round the financial year 2012-13 through DP from Governmet or Semi Government Organisation											
36	Procurement of Furniture/Fixtures	Furniture/Fixtures (e.g., almirah, book shelf, chairs, tables, racks etc.) will be procured round the financial year 2012-13 through RFQ or DP as deemed feasible for DESCO											
37	Procurement of equipments for official usage	Office Equipments (e.g., fax machine, fire extinguishers etc.) will be procured round the financial year 2012-13 through RFQ or DP as deemed feasible for DESCO											
38	Procurement of Computer and Peripherals	Office Equipments (e.g., printers, laptop, computer etc.) will be procured round the financial year 2012-13 through RFQ or DP as deemed feasible for DESCO											
39	Procurement of toner/catridge	Toner/catridge will be procured round the financial year 2012-13 through RFQ or DP as deemed feasible for DESCO											

6.2.14 Recommended Sequence of Operation in a procurement/stores transaction of DESCO

Till now, no sequential process is maintained in procurement and store transactions of DESCO. But a standard system should be developed to make the store and procurement function more effective. The following figure describes a sequential process of how a procurement department and store management of DESCO can perform together:

Figure 6.2: Sequence of operation of Procurement and Store Management of DESCO

Step 1: User (different divisions and department of DESCO) submits Requisition to **Material Planning & Stores Department** (excepts stationeries, furniture, computer & computer peripherals items)



Step 2: Store is handed goods to user divisions and departments



Step 3: A record of this issue is submitted to **Material Planning, Clearing & Movement**



Step 4: Assuming that it is time to do so, a request to order is transmitted. **Material Planning, Clearing & Store Division** will analyze this and then initiate the request order to **Procurement,**

Inspection & Testing Division



Step 5: Procurement, Inspection & Testing Division through appropriate procurement methods procure the goods after having meticulous evaluation of the suppliers



Step 6: Procured goods/equipments sent to **Store**



Step 7: Record of receipt at store sent to **Procurement, Inspection & Testing Division** and **Material Planning, Clearing & Store**



Step 8: Submitted invoice by suppliers then forwarded to **Finance & Accounts Division** for checking and verification before payment

6.3 Limitation and assumptions

During the research work several limitations were faced which ensures that there are scopes of further study in this topic. The limitations and assumptions that were made during the research are mainly as follows:

- a) Prior to the start of the research, it was expected that some works relating this would be undertaken but unfortunately that was not the case.
- b) Time barrier did not permit to work in-depth for example it was not possible to visit all stores, to interview all store related staffs etc.
- c) It was not possible to collect more information of stores as record management of Stores is not that much rich.
- d) Finally, it was assumed that for the purpose of confidentiality, disclosure of names of the interviewees has not been allowed by the interviewees.

6.4 Scope of Future Studies

This type of research work has not been previously undertaken in any departments of DESCO not in Store Management. As a result, there are many scopes of further studies to fine tune the findings of this research as well as open new areas of study:

- a) Year wise study could be done to measure the differences the findings of the different years.
- b) A similar study could be done on other departments of DESCO.
- c) A more holistic approach could be undertaken by incorporating all the process of store management.

6.5 Conclusion

Store Management is an inseparable part of business of DESCO. If effectively planned, organised and maintained, Store Management could keep safe custody of materials, their receipts, issues, and accounting with the objective of efficiently and economically providing the right goods at the right time whenever required in the right condition to all user departments. Store Management is now regarded as a cost centre, but effective functioning of it could reverse the view to top management of DESCO.

REFERENCE

**BIBLIOGRAPHY
QUESTIONNAIRE
ANALYZED RESULTS**

ANNEXURE-A
BIBLIOGRAPHY

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ANNEXURE-B
QUESTIONNAIRE SURVEY

Dear Sir,

This voluntary questionnaire is part of a study being conducted on *Improving Performance of Store Management: A Case Study of Dhaka Electric Supply Company Limited (DESCO)*. The study looks into details the existing operational performance of DESCOS Store Management. The purpose of this dissertation is to find out possible ways in improving performance of Store Management of DESCOS.

This questionnaire survey will be used as a part of the researcher's Top up Masters Programme in the BRAC University, Bangladesh. This study is being conducted by **Rashed Morshed MCIPS, Deputy Manager** under the direction of my Supervisor Mujahid Mohiuddin Babu, Lecturer, Institute of Business Administration (IBA), Dhaka University, Dhaka. The questionnaire asks about the general questions and issues on existing performance of Store Management of DESCOS. Please answer the questions from your experience. Your input is very valuable to improve the performance of existing store performance of DESCOS because only you can supply the required information. A copy of survey result can be sent to you by e-mail at your request.

You will be highly praised and appreciated for spending your valuable time and effort to fulfil this questionnaire. The questions mentioned in this questionnaire have retained no right or wrong answer. On the basis of your perception, views and experience you are requested to select the most appropriate answer for each question. You may find out irrelevancy or impertinency of some questions. However, researcher would like to request to answer all the questions, because every question contains a specific objective. In the case of your unwillingness to answer any question you are requested to continue to answer the remaining questions.

Thank you in advance for your help, we do appreciate your time.

Sincerely yours

Rashed Morshed MCIPS
Batch: Fall, 2012, Program: MPSM
Student ID No: 12282001
IGS, BRAC University
E-mail:rashedgrambd@gmail.com

General Information of the respondents

1.1 Name of the Department

.....

1.2 Designation of the Officer

.....

1.3 Working Experience (years)

.....

1.4 Educational Background

.....

NB: Please rate the following statements based on a Scale from 1-5, where 1 represents the “Least Important” or “Strongly Disagree”; 5 represents the “Most Important” or “Strongly Agree”; and select “N/A” if you are uncertain in rating a particular statement.

2.0 General Perception and attitude regarding Store Management of DESCO

General Perceptions	1	2	3	4	5
a) It’s running good					
b) Takes less time to get the jobs done					
c) It is not bureaucratic					
d) Every individuals of DESCO are very much concerned about existing performance of Store Management.					
e) Store Management is a asset for DESCO Management					
f) Project, Procurement, Inspection & Testing and Store Management has a coordination					
g) DESCO has a vision for improving performance of Store Management					
h) Store Staffs are very skilled					

3.0 Determine the Objectives and Scope of DESCO’s Store Management

Objective and Scope of Store Management	1	2	3	4	5
a) Ensures the supply and delivery of the right goods, to the right place at the right time within acceptable cost framework to the end users.					
b) Performance can be identified, measured and evaluated in quantifiable terms.					
c) Works out for reducing cost of capital tied up in					

inventories, obsolescence costs, deterioration costs, warehousing costs etc.					
d) Objectives is to support and simplify the supply chain and to control total cost					
e) It helps to increase profit of DESCO					
f) Store Team can give input to Procurement & Contract Division					
g) Objectives and scopes are specified in DESCO's policy and specific guidelines are made for Store Management to direct the activities of Store and measure and quantify the performance of Store Management					
h) Reduces the time for getting a product from the Stores to the respective department					
i) Provide uninterrupted service to other divisions and departments of DESCO					
j) Functions of Store Management is only confined in receiving, storing, order picking and despatch					

4.0 Evaluate the strategic factors affecting the choice of Store Management

Strategic Factors	1	2	3	4	5	N/A
a) DESCO Management set objectives, quantifies targets for achievement for Store Management.						
b) Store Management Team can take the decision on stock control, order processing, transport issues, warehouse design and layout and many other similar activities independently.						
c) Initiatives has already been taken for short term, medium term and long term planning for improving the performance of Store Management						
d) DESO Management monitors the performance of Store Management						
e) On a regular basis, strategic decisions (long term decisions) are taken from board level.						
f) Key Performance Indicators (KPI) are set to measure the performance of Store Management						

5.0 Appraise and evaluate the role and effects of different stores at DESCO

Role and effects of different stores	1	2	3	4	5	N/A
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a) Building design of central stores and other stores allow for maximum flexibility and road access to distribute goods to different divisions						
b) Existing stores have adequate lighting with natural light where possible, adequate parking facilities and required office space						
c) Design and layout of different stores use an efficient system of product identification						
d) Different stores use efficient material handling equipment						
e) Racking of stores are designed to maximize the cubic capacity						
f) Central Store and other stores act as an effective collection and distribution point for items of stock						
g) Goods stored in different stores are located as such that they could be identified as high usage items, medium usage items and low usage items						

6.0 Assess Inventory Management of DESCO

Inventory Management	1	2	3	4	5	N/A
a) Stock records are maintained properly						
b) Can trace stock movements by an efficient coding system						
c) Can regulate the level of stock for each item so that stock outs and excess stocks are avoided						
d) Store Management considers factors such as 'VALUE' and 'USAGE' of items to manage its inventory						
e) Demand Analysis is done before stocking the goods at store						
f) Store Management manages efficiently and effectively obsolete stock (outdated stock) and redundant stock (excess stock)						
g) Store Management can efficiently handle						

demand of different divisions						
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7.0 Procurement Practice at DESCO

Procurement Practice	1	2	3	4	5	N/A
a) Decisions on procurement is mostly taken at strategic level of the company						
b) Categories of Procurement are done beforehand of all purchases						
c) Long term, medium term and short term procurement planning exists at procurement department						
d) Cross functional team works takes place during high value and medium value purchases						
e) Contract Management is done efficiently and effectively before and after contract signing with suppliers						
f) Before taking any procurement decision, store availability is always considered						
g) Risk identification and risk assessment is done before and after procurement						
h) Before the starting of any procurement process, requirements of suppliers and concerns of user department are analysed						
i) Link between procurement and store is always ensured by DESCO Management.						

Examine and analyse security in different stores of DESCO

Security Issues in different stores	1	2	3	4	5	N/A
a) Store Management is concerned about security of allied vehicles, stores and personnel.						
b) Central Store and some big stores efficiently operates CCTV to secure its office premises						
c) When a visitor visits any of the stores of DESCO, there is a process of sign in while entering and sign out while leaving and submit visitor's personal belongings						
d) Visitors are being monitored while they are in store premises						
e) Employment records, verification of references, History of personnel are scrutinized minutely when any permanent staff, temporary staff, driver or peon are deployed at different stores of DESCO						
f) Any kind of pilferage, criminal activity, theft are being recorded and informed to top management of DESCO						

8.0 Examine health and safety and legal issues involved in Store Management

Health and safety and legal issues	1	2	3	4	5	N/A
a) DESCO Management is concerned about the health and safety issues of store staffs						
b) Store staffs are informed, instructed and trained of safety issues at work						
c) DESCO Management provide and maintain a working environment that is safe and without risk to health to its store staffs						
d) Staffs of stores are using equipment like safety helmets, gloves, eye protection, high visibility clothing, safety footwear, safety harnesses as and when required during working at stores						
e) Safety Register are maintained to record						

when any staffs are being injured while doing work at stores						
f) DESCO Management is concerned about the legal issues of Store Management						

9.0 Evaluate the use of information and Communication Technology at Central Store

ICT and its usage at Central Sore	1	2	3	4	5	N/A
a) Store staffs can capture delivery information, record stock movements, maintain stock balance, monitor utilization, track the movement of goods through the system, sort order requirements through its IT system						
b) Staffs of stores have internet and intranet access to communicate efficiently						
c) The IT system also maintain stock integrity by recording and identifying damage, identifying loss, recording deterioration, ensuring stock rotation						
d) Store staffs are confident in using IT software and communicate through internet and intranet						
e) IT system of Central Store enhances speed of order entry and order processing and reduce lead-time						

End of questionnaire. Thank you for your valuable contribution

ANNEXURE-C
ANALYZED RESULTS

2.0 General Perception and attitude of Store Management

Sl.	Particulars	Min	Max	Mean	Std. Dev
1	It's running good	2	5	3.2941	0.9196
2	Takes less time to get the jobs done	3	5	3.6471	0.7019
3	It is not bureaucratic	2	4	3.0000	0.8660
4	Every individuals of DESCO are very much concerned about existing performance of Store Management.	2	4	2.8235	0.8090
5	Store Management is a asset for DESCO Management	1	4	2.1765	1.0744
6	Project, Procurement, Inspection & Testing and Store Management has a coordination	2	5	3.2353	1.0326
7	DESCO has a vision for improving performance of Store Management	3	5	3.9412	0.8269
8	Store Staffs are very skilled	1	4	2.4375	1.0935

3.0 Objectives and Scope of DESCO's Store Management

Sl.	Particulars	Min	Max	Mean	Std. Dev
1	Ensures the supply and delivery of the right goods, to the right place at the right time within acceptable cost framework to the end users.	2	5	3.0000	0.8660
2	Performance can be identified, measured and evaluated in quantifiable terms.	2	4	2.7647	0.6642
3	Works out for reducing cost of capital tied up in inventories, obsolescence costs, deterioration costs, warehousing costs etc.	2	4	3.4118	0.7123
4	Objectives is to support and simplify the supply chain and to control total cost	2	4	3.1176	0.6966
5	It helps to increase profit of DESCO	1	4	2.1765	1.0744
6	Store Team can give input to Procurement & Contract Division	2	5	3.4706	0.9432
7	No objectives and scopes specified in DESCO's policy and no specific guidelines for Store Management to direct the activities of Store and	2	5	3.7059	1.1600

Sl.	Particulars	Min	Max	Mean	Std. Dev
	measure and quantify the performance of Store Management				
8	Reduces the time for getting a product from the Stores to the respective department	2	5	2.6875	0.9465
9	Provide uninterrupted service to other divisions and departments of DESCO	1	5	2.9412	1.2485
10	Functions of Store Management is only confined in receiving, storing, order picking and despatch	1	5	2.8235	1.4678

4.0 Evaluate the strategic factors affecting the choice of Store Management

Sl.	Particulars	Min	Max	Mean	Std. Dev
1	DESCO Management set objectives, quantifies targets for achievement for Store Management.	2	4	2.8824	0.7812
2	Store Management Team can take the decision on stock control, order processing, transport issues, warehouse design and layout and many other similar activities independently.	2	5	3.5294	0.8745
3	Till date no initiatives has been taken for short term, medium term and long term planning for improving the performance of Store Management	2	4	3.1176	0.8575
4	DESO Management monitors the performance of Store Management	2	4	3.3529	0.7019
5	On a regular basis, strategic decisions (long term decisions) are taken from board level.	2	5	3.1765	0.8828
6	Key Performance Indicators (KPI) are set to measure the performance of Store Management	1	3	2.2353	0.9034

5.0 Appraise and evaluate the role and effects of different stores at DESCO

Sl.	Particulars	Min	Max	Mean	Std. Dev
1	Building design of central stores and other stores allow for maximum flexibility and road access to distribute goods to different divisions	2	5	3.176471	0.808957
2	Existing stores have adequate lighting with natural light where possible, adequate parking facilities and required office space	2	5	3.294118	0.919559

3	Design and layout of different stores use an efficient system of product identification	1	4	2.764706	1.20049
4	Different stores use efficient material handing equipment	1	4	2.411765	1.175735
5	Racking of stores are designed to maximize the cubic capacity	1	4	1.941176	1.144038
6	Central Store and other stores act as an effective collection and distribution point for items of stock	2	5	3.235294	1.032558
7	Goods stored in different stores are located as such that they could be identified as high usage items, medium usage items and low usage items	1	5	3.470588	1.545867

6.0 Assess Inventory Management of DESCO

Sl.	Particulars	Min	Max	Mean	Std. Dev
1	Stock records are maintained properly	3	5	3.24	0.66
2	Can trace stock movements by an efficient coding system	1	5	3.24	1.39
3	Can regulate the level of stock for each item so that stock outs and excess stocks are avoided	1	4	3.00	1.22
4	Store Management considers factors such as 'VALUE' and 'USAGE' of items to manage its inventory	1	4	2.59	1.18
5	Demand Analysis is done before stocking the goods at store	2	4	2.76	1.03
6	Store Management manages efficiently and effectively obsolete stock (outdated stock) and redundant stock (excess stock)	2	5	3.71	0.99
7	Store Management can efficiently handle demand of different divisions	1	4	3.35	1.54

7.0 Examine and analyse security in different stores of DESCO

Sl.	Particulars	Min	Max	Mean	Std. Dev
1	Store Management is concerned about security of allied vehicles, stores and personnel.	1	4	2.7647	1.0914
2	Central Store and some big stores efficiently operates CCTV to secure its office premises	1	5	2.9412	1.5601
3	When a visitor visits any of the stores of DESCO, there is a process of sign in while entering and sign out while leaving and submit visitor's personal belongingness	1	4	2.8824	1.1663
4	Visitors are being monitored while they are in store premises	2	5	3.2353	1.0914
5	Employment records, verification of references, History of personnel are scrutinized minutely when any permanent staff, temporary staff, driver or peon are deployed at different stores of DESCO	1	4	2.9412	1.2485
6	Any kind of pilferage, criminal activity, theft are being recorded and informed to top management of DESCO	1	4	3.0588	1.1974

8.0 Procurement Practice at DESCO

Sl.	Particulars	Min	Max	Mean	Std. Dev
1	Decisions on procurement is mostly taken at strategic level of the company	2	4	3.2941	0.9196
2	Categories of Procurement are done beforehand of all purchases	1	4	3.6471	0.7019
3	Long term, medium term and short term procurement planning exists at procurement department	1	4	3.0000	0.8660
4	Cross functional team works takes place during high value and medium value purchases	1	3	2.8235	0.8090
5	Contract Management is done efficiently and effectively before and after contract signing with suppliers	1	4	2.1765	1.0744
6	Before taking any procurement decision, store availability is always considered	2	4	3.2353	1.0326
7	Risk identification and risk assessment is done before and after procurement	1	4	2.9412	0.8269
8	Before the starting of any procurement process, requirements of suppliers and concerns of user department are analysed	1	4	2.4375	1.0935
9	Link between procurement and store is always ensured by DESCO Management.	1	4	2.4375	1.0935

9.0 Examine health and safety and legal issues involved in Store Management

Sl.	Particulars	Min	Max	Mean	Std. Dev
1	DESCO Management is concerned about the health and safety issues of store staffs	1	5	3.1176	1.3639
2	Store staffs are informed, instructed and trained of safety issues at work	3	5	3.6471	0.7019
3	DESCO Management provide and maintain a working environment that is safe and without risk to health to its store staffs	2	5	3.2353	0.9034
4	Staffs of stores are using equipment like safety helmets, gloves, eye protection, high visibility clothing, safety footwear, safety harnesses as and when required during working at stores	2	5	3.3529	0.8618

5	Safety Register are maintained to record when any staffs are being injured while doing work at stores	1	3	2.2941	0.8489
6	DESCO Management is concerned about the legal issues of Store Management	2	5	3.4118	0.9393

10.0 Evaluate the use of ICT at Central Store

Sl.	Particulars	Min	Max	Mean	Std. Dev
1	Store staffs can capture delivery information, record stock movements, maintain stock balance, monitor utilization, track the movement of goods through the system, sort order requirements through its IT system	1	4	3.2941	1.2127
2	Staffs of stores have internet and intranet access to communicate efficiently	1	4	2.9412	1.3906
3	The IT system also maintain stock integrity by recording and identifying damage, identifying loss, recording deterioration, ensuring stock rotation	1	3	2.2353	0.9034
4	Store staffs are confident in using IT software and communicate through internet and intranet	1	4	2.2353	1.0914
5	IT system of Central Store enhances speed of order entry and order processing and reduce lead-time	1	4	2.7647	1.1472