



The functional heads at the Hosur unit of XYZ Ltd., were busy for the last three months collecting all kinds of data and analyzing them. At the monthly review meeting, each area was taken up for discussion. It was the turn of the marketing head last month. The next meeting was scheduled to take stock of the inventory policies and procedures currently in vogue. The Senior Manager, Purchase was expected to analyze the inventory related costs and outline a policy for better inventory control.

The Background

XYZ was incorporated as a private limited in August 1912 and later converted into a public limited company in October 1958. Though the company started with the manufacture of soaps and perfumes, it has added a variety of products when it took a decision way back in 1964 to diversify its product line. Today it is a conglomerate having business in soaps, perfumes, plastics, petrochemicals, paints, industrial electronics, and agro-business. The combined sales for the conglomerate during the year 1982-83 was Rs. 2286 Crores. The conglomerate exported goods worth about Rs. 95 Crores. The unit at Hosur manufactured electronics components.

The inventory position has been deteriorating over the last four years. The year-end inventory position, as revealed by the annual reports of the conglomerate, showed an increase from Rs.123 Crores as at 30.06.80 to Rs. 249 Crores as at 31.03.83. Although the balance sheet and the profit & loss account has been prepared taking into consideration the performance of operating units, there was an overall increase in the inventory holding in all the units, which was reflected in the overall figure also.

The conglomerate has been operating in a highly centralized fashion. All major planning activities were done at the corporate office. However, many inputs for this decision-making were made by all the operating units. The headquarters sent the tentative monthly production plan two months prior to the commencement of production. The final production plan arrived 5 days prior to start of the production. It was not unusual for the corporate office to change the production plans while production was progressing. This was communicated through telephone, telex, fax or mail. Once the production plan was made, the requirement of each item was also computed using the bill of materials. Exhibit I has the tentative, and final plans and the actual production of the Hosur unit for last year for a few components and Exhibit II has the consumption pattern of the 'A' class item.

The existing buying process

The company has been following a centralized system, which was operated from the Head quarters. The advantages of this system according to the organisation were:

- Better control over inventory related costs.
- Since the corporate office compiled the net requirements of all operating units, the order quantities for the suppliers were large sometimes inducing them to offer generous quantity discounts.
- In case of sudden shortages of an item at a location, the corporate office can advice another location to transfer stocks because it knew safety stocks at each location.

The corporate office advised the purchase departments at the units on the following:

- What to order? How much to order?
- When to order?
- On whom to place the order?
- What should be the delivery date?
- What is the price?

On receipt of this, the purchase department at the operating units took the responsibility for the procurement of items as per the advice and payment to suppliers. In order that the corporate office took decisions on the above items, it needed the following:

1. Stock levels of each item under inventory management.
2. The production plan for the following month.
3. The maximum and the minimum stock levels to be maintained for each item and
4. The previous month's consumption.

The information pertaining to 1 and 4 were provided by the operating unit, 3 was a policy decision made at the corporate office based on historical data and future plans and 2 was a market related information which was forecasted.

The Hosur Unit

The unit manufactures electronic components that form part of a variety of control devices of several equipments. Basically, there are minor variations in the basic configuration, which result in 13 different products as they roll out of the assembly. The variations are mainly due to the differences in the rating and the number of various electronic components used to build the product and the variations in the electronic circuit design.

The Purchase Department

The purchase department was headed by Senior Manager, Purchase who was assisted by a Manager, Purchase. There were four buyers attached to the department. The buyers were given responsibility to procure materials of specific groups of materials. There was one buyer for semi conductor components, another for raw materials and a third buyer for imported components. Another buyer was looking after consumables, office equipments and capital equipments. Although imported components formed a small percentage of total purchase, the procedure and modalities were different, necessitating an exclusive buyer to handle them. Two clerical staff undertook the responsibility for all the typing, data preparation and entry into the computer, preparation of purchase orders and other such support activities. The purchase department was provided with a PC-AT, which was connected to the local area network.

The managers were interacting with the corporate office concerning matters such as source development, supplier rating and preparation of purchase budgets. In addition liaising with other departments such as stores, quality control, finance, production planning and design was also done. This was an ongoing activity to help take many decisions in issues such as value engineering, make or buy, new material development, import substitution, etc.

Recently, there was an exercise carried out by the purchase personnel to collect data useful for making certain policy decisions. On analysing the past three years records it was found that on an average 450 purchase orders were sent out per year. An ABC analysis was carried out and the average lead time taken by the vendors for the supply of such items were computed. Exhibit III has the relevant data on the unit price and lead time of the components listed in Exhibit II. It was also found that currently the average investment in inventory is to the tune of Rs. 3.5 Crores.

Inward goods stores and inspection section

The Hosur unit had an inward goods stores and inspection section that performed the task of receiving consignments of supplies, conducting the inspection and initiating the necessary follow-up action. The section employed two load/unload workers on a temporary basis each for a monthly wage of Rs.1200/-. As soon as a consignment arrived, a Goods Received Note (GRN) was prepared after inspecting the materials for any damages. If there were damages, the insurance details were verified and the consignment sent to the claims section. The claims section liaised with either the supplier or the insurance company for claims.

The consignment free of damages was inspected and the accepted lot was set aside for marking codes and placing at the desired location. Simultaneously, the details were filled in the GRN. The GRN details were used to update the stock position and copies of it were sent to other departments such as Finance and Purchase.

The stores employed a clerk, an inspector and an assistant manager. In addition one fork lift truck operator was employed.

Recent Developments

Recently the company took a decision to decentralize most of the decision making processes. Under this scheme, each unit was focused on certain areas of the business. The individual unit heads entered into an agreement with the corporate office regarding the target for sales turnover, profitability and a few other broad parameters. The unit took all operational decisions with the required autonomy. Recalling the decision to decentralize, the Executive Director at the corporate office had the following remarks to make:

“Over the years, the centralized planning system has not produced the advantages for which it was designed. There was a lack of coordination between the head quarters and the operating units. The problems varied from absence of proper communication resulting in non-availability of certain key information for decision making at the corporate level on one hand to over communication by way of too many reminders, explanatory messages and clarifications on the other hand. This has resulted in increased cost of operations.

“Another factor which was significant was the current mix and level of the activities of the conglomerate. The last two decades saw extensive diversification of the activities that common ordering of materials was no longer attractive. The nature of activities in the agro products division was very different from the electronics division or the consumer non-durable division that it required a focused team effort. For example, the buying process in the agro business required more commercial skills whereas the skill requirements for the electronics division such as the Hosur unit were more technical in nature.

“Moreover, the corporate office realised that it was doing too many things which were related to day-to-day operations. With the result it couldn't devote much time to strategic planning in matters relating to procurement, materials, new products, and markets”.

The study group

A study group was constituted at the Hosur unit to analyze the various expenditures incurred at the plant level. This was initiated by the unit head as soon as decentralization was put into effect. Until recently, such statistics was not compiled and analyzed at the unit level. The units would merely send a host of weekly and monthly reports to the corporate office. The corporate staff performed the task of analyzing the data and informing the various unit heads regarding the variances from budgetary provisions.

There was a greater impetus to collect and analyze the cost data pertaining to all functional areas consequent to decentralization. This has been due to the fact that promotions, profit sharing and other such incentives were closely related to the unit's overall performance in relation to the commitment given to the corporate office. Moreover, the autonomy to take the operations decisions motivated the functional

managers to collect and analyze the cost data. A portion of the cost data gathered so far by the study group is given in Exhibit IV.

While conducting the study, the group considered each item of cost and attempted to trace them to the originating department. Although utilities and consumables were generally used by all departments, the requisition forms contained the department code which was used by the group to trace the costs. All such requisitions for approval of revenue expenditures also contained department code. Since the requisitions were keyed into the computer, the traceability did not pose serious problems. Certain service items such as fork lift trucks maintenance, insurance premium, freight and demurrage were allocated to specific departments using the basis developed for costing purposes. Exhibit V gives the apportionment details for the items listed in Exhibit IV.

Exhibit I
Tentative, Final Plans and Actual production for a few components

Month	Production	Component A	Component B	Component C	Component D
April	Tentative	6000	2500	19000	15000
	Final	6500	2500	17000	15000
	Actual	7370	2427	14145	13249
May	Tentative	6500	2500	21000	n.a.
	Final	6500	2000	14500	4000
	Actual	5438	2078	16897	10177
June	Tentative	6500	2500	21000	n.a.
	Final	6500	2000	14500	10500
	Actual	5882	2122	13145	14671
July	Tentative	6000	2500	13500	14000
	Final	5000	2500	24500	12000
	Actual	9137	2661	28287	11960
August	Tentative	4000	2500	6000	16000
	Final	6000	2500	5000	12500
	Actual	9170	2688	7883	13631

Exhibit II
Consumption Pattern of "A" Class Items

Item name	1982										1983	
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
CSF 60 x 27 LD	11058	12899	12595	15532	12786	13021	14260	14864	15067	12914	13365	15338
ACT 60 x 27 MM	2180	2854	2937	3071	1585	1390	2433	3233	2868	2970	2202	2234
GLD MM82 2600 MTS	---	---	---	28	4253	12683	7153	11160	15621	19131	921	2705
PLN MM 2100 MTS	3499	5931	4474	5595	3606	3505	4435	5016	4349	3404	3656	3812
GLD MM 2100 MTS	2675	5484	2627	2445	2044	2071	2737	2567	2702	3590	3199	3051
ACT DUAL 82 x 30 MM	131	287	270	311	148	232	314	268	223	306	200	276
99MM GLD 100 MTSQR	4608	4582	9204	9727	6077	8016	10104	10220	6973	10795	6679	10504
ST/DG PLN	3024	1768	---	4563	2078	677	2989	1754	2456	2278	3219	2345
99MM GLD BRD 100 MTSQR	743	537	891	522	719	834	1238	947	---	459	855	1167
59MM GLD FOI	2345	2867	1489	3187	2150	2722	1867	2439	1196	2380	2100	1939

Exhibit III
Cost and Lead time details for A class items

Item name	Unit Cost (Rs.)	Lead Time (Days)
CSF 60 x 27 LD	98.00	30
ACT 60 x 27 MM	395.00	38
GLD MM82 2600 MTS	154.00	30
PLN MM 2100 MTS	216.00	45
GLD MM 2100 MTS	271.00	60
ACT DUAL 82 x 30 MM	3180.00	50
99MM GLD 100 MTSQR	95.80	20
ST/DG PLN	160.00	15
99MM GLD BRD 100 MTSQR	340.00	37
59MM GLD FOI	112.50	30

Exhibit IV
Some cost details extracted from the study group report

No	Item of expenditure	Amount (Rs.)
1	Stationary Expenses	1,854,000.00
2	Telephone, Telex, Fax etc.	1,095,600.00
3	Taxi, Auto (Travel Expenditure)	1,145,000.00
4	Postage	330,000.00
5	Courier Charges	380,000.00
6	Insurance Premium for stores	742,500.00
7	Handling costs; Fork lift maintenance, Depreciation	765,000.00
8	Batteries Replacement	1,224,500.00
9	Maintenance of Tractors, Trailers	149,000.00
10	Airconditioning	645,000.00
11	Utilities	2,235,400.00
12	Freight Demurrage	655,400.00

* All values are yearly expenditure in rupees.

Exhibit V
The apportionment details for the cost elements

	Purchase & Stores	Marketing	Production	Design	Finance	Gen; Admin & Others
Stationary Charges	9	20	17	15	15	24
Telephone, Telex, Fax etc.	16	25	9	7	10	33
Taxi, Auto , Travel	8	45	4	3	12	28
Postage	9	18		5	14	54
Courier Charges	10	20	3		5	62
Freight Demurrage	40					60
Insurance premium for stores	100					
Forl Lift Maintenance	35		54			11
Batteries replacement	40		50			10
Maintenance of tractor	75	5				20
Air-conditioning	10	2	7	1	3	77
Utilities	7	4	41	3	4	41

** All numbers are expressed as percentages.*

For limited purposes many departments have been combined with General Administration.