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ABC Transport Equipment Ltd

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ABC Transport Equipment Ltd. ¹

B. Mahadevan

As Mr. KK Rao, General Manager (Accounting & Control) finished reading the task force report for the third time since it was prepared a month ago, two things were becoming clear to him. One, the organisation has a good chance to improve its performance by implementing the proposed costing system and thereby face the onslaught of competition in the market place. Secondly, implementing the system and using it for cost reduction requires careful thought. It requires active support from not only the top management but also from his peers.

Introduction

Mr. Rao was appointed the head of the special task force appointed by the CEO to re-design the existing costing system after the last executive committee meeting of ABC Transport Equipment Ltd. The committee comprising of all functional chiefs meet four times a year and discuss strategic issues. The company has been badly hit in the low end earthmoving equipment product line. Repeatedly, the market signals point to the high cost of manufacture. The recently appointed consultant also indicated high cost as one of the critical areas.

Mr. Rao tried to organise the stream of thoughts running through his mind ever since he was appointed head of the task force. The competition is pushing ABC Transport Equipments Ltd. to the wall. The seemingly advantageous technological leadership, which ABC enjoyed during the last decade is giving way to the cost advantage that the competition offers. The organisational mandate is to immediately look for cost reduction to gain the losing market share. Can the

¹ This case was written by Dr B Mahadevan, Associate Professor, Indian Institute of Management, Bangalore, Bannerghatta Road, Bangalore 560 076. INDIA. This case was based on the work done by Mr. B S Manjunath and Mr. S Seshadri. The author acknowledges the discussions that he had with Professor R Narayanaswamy and Professor V G Shridharan, IIM Bangalore while developing the case. The name of the company, the designations, and the names of persons mentioned in the case are all imaginary. The original names have been disguised to preserve confidentiality. Any resemblance to the names to persons in any organisation may be purely accidental. The cost figures given in the case has also been modified without losing the original character and purpose of intended use.

existing costing system provide useful hints? Or should he build a new system? How should he go about it? What is the future role of costing system at ABC?

ABC Transport Equipment Ltd. is a public limited company started in the year 1955. The company began its operations in the manufacture of industrial material handling equipment. However, after a few years of operation, ABC under took a business strategy exercise and decided to enter into industrial applications of transport equipment, mainly in the area of earth moving equipment. There were hardly any players in the field and ABC could foresee certain advantages of entering this field fairly early. Consequently the earth moving equipment division (ABC-EM) was formed in the 60s.

ABC-EM invested huge sums in R&D facilities and also established high-tech test laboratories for testing and research purposes. Until recently, the company has been a dominant player in the market with an over all market share of about 70% in the earthmoving equipment industry.

The underlying strategy of ABC-EM has been one of providing technologically superior products to the customers in India. Over the last one decade, ABC-EM undertook many exercises as a part of its overall strategic plan. The company was able to provide a wide range of earth moving equipment by introducing new products of latest technology. A few years back ABC-EM set up its own engine division and the hydraulics division. This was as part of the backward integration strategy that the company adopted at that time. The existing manufacturing facilities were also modernised recently by adding several CNC machines. Three years ago, the company also launched a major redesign and upgradation of some of its existing products. This was necessary due to some developments at the market place.

ABC-EM Products & Markets

Ten years back, ABC-EM was operating on high-end markets, which largely included high-tech, high technology earth moving equipment. ABC-EM was able to command a premium for its products for reasons of technological superiority. Moreover, competition was also less since operating in these products typically would involve huge capital investments, good infrastructure, and technical manpower. The competitors could not match well with that of ABC-EM on these dimensions.

Over the last one decade, ABC-EM could not achieve the targeted growth purely on the high-end markets. In fact way back in 1983, ABC-EM realised that it can not sustain the growth of the company merely on the high-end market of the earth moving equipment. The company diversified into related areas such as transport equipment for underground mining, aircraft towing applications, oil exploration purposes etc. However, a few years later, the future projections for the new product mix indicated a very slow growth rate. In view of the severe financial crunch the company faced during that period, ABC-EM started manufacturing products in the low end of the earth moving equipment category, four years ago. Consistent with its strategy, ABC-EM provided certain good technological features that were not available in the competitors' products of this range.

In spite of a good growth rate in the low end products, that it began to manufacture recently, ABC-EM soon realised that operating in this range was very different from that of its earlier products. These markets were already over crowded by many players. A typical customer for this product is a private building/civil works contractor, to whom price, reliability, and after sales support are extremely important in the order mentioned. Hence although high technology products are welcome in the market, it is the price that would largely influence the market share in the long run.

This realisation meant something fundamental to ABC-EM. Traditionally, ABC-EM has been geared up to a situation where it is technology that would matter. Relatively, the cost of manufacture was not a serious issue. The development of manufacturing practices, the costing and management control systems were all guided by this understanding. However, the new products dictated that price (and hence the cost of manufacture) is the most important.

Recent Developments

The opening up of Indian economy had a significant impact on the various types of industries. The industry in which ABC-EM was operating was no exception to this. The abolition of licenses and broad banding of the licences in certain categories, the virtual removal of the monopoly component of the Monopoly Restrictive Trade Practices Act, 1969 have all led to intense competition in the segment in which ABC-EM is operating.

A study conducted by a consultant indicated the current position of ABC-EM in the low end products. Annexe 1 is a representation of the over all findings by the consultant with respect to the competitive position of ABC-EM. The fallout of all these developments to ABC-EM, particularly to its low end markets in the earth moving equipment category was considered and certain recommendations were made. The study concluded that the cost of goods manufactured was relatively high and highlighted the need for immediately reducing them:

- Part of high cost is due to appreciation of Japanese Yen. This has been due to significant import content (20%)
- In addition to the existing domestic competition, the continuous reductions in import duty would soon pose threat of competition from overseas players. Moreover, overseas manufacturers were making either joint venture partnerships with Indian firms or setting up their own manufacturing facility in the country².
- Existing cost control systems do not seem to adequately throw light on the areas that offer cost reduction opportunities. There is an urgent need to identify high cost operations and initiate ways and means for cost control

The fall out of the consultants report was to look at the costing system and re-design it with a view to identify areas for cost reduction. The unit head, Mr. Ram Mohan, set up a task force to perform this exercise. The scope for this committee was broader than merely gearing up a system

² For instance, the Bangalore works of L&T has a joint venture relationship with Komatsu of Japan and is eventually going to be the base for Komatsu's Indian operations.

that would help identify cost reduction areas. The following is an extract of the terms of reference:

“...The committee shall take this opportunity to understand the current requirements of a costing system from a multi-user perspective and develop systems that would cater to all the user groups. Such user groups shall include the ultimate customer represented by the marketing, the manufacturing, the accounting and control, and the business strategy group. The costing system should help to identify areas for continuous improvement and stimulate improvement, and provide a sound basis for strategic decisions with respect issues such as new products and capacity. The committee shall ensure that the re-designed costing system is responsive to market realities and helps in developing a culture of cost management as opposed to mere cost reduction. ...”

The task force was headed by Mr. K K Rao, General Manager (Accounting & Control). The task force started with studying the existing costing system.

Existing costing system

Mr. K K Rao, had the following to say about the existing system:

“The system of costing that we follow presently is batch costing. Under this system, all components, sub-assemblies, and equipment are manufactured in batches of convenient (economic) quantity and the costs thereof are recorded on separate batch work orders. Each batch work order is given an unique number for identification.”

The following paragraphs describe the current status of the existing costing system.

Raw materials, components, and bough out items are stored in central stores. They are drawn for manufacturing through material requisition notes (MRNs). Based on the release of work orders for production of equipment, job cards are issued by the production control department. Job cards are issued for each part/component/sub-assembly covering all operations involved. The standard hours required for carrying out particular operations are indicated in the job card. As against this, the actual hours expended by the workers to carry out a particular operation is recorded (for the purposes of incentive calculations). Each department is identified by a unique code. The departments are classified into direct (code no: 1xxx), indirect (code no: 2xxx), administrative (code no: 3xxx) and welfare (code no: 4xxx) departments. All cash/remittance vouchers indicate the department codes against which the expenditure under various heads is charged.

Material Overheads (MOH)

The expenditure of the following departments is collected and charged to material issued on work orders on a percentage basis as material overhead (MOH):

- Materials Management (including stores)
- Materials Accounts, Bills Payable

- Receiving inspection
- MIS Dept. (suitably apportioned)
- Clearing office (at Madras)

Other overheads

Certain expenditures incurred were collected separately and added on to the cost of the product manufactured as a percentage of these costs to the annual turnover of the company. Such costs include R&D expenditure, Cost of special tools (both of these are amortised), Royalty, Technical know-how, Warranty provision, Financing charges, and Sales Over Head (SOH).

The expenditure of the welfare departments are apportioned to the other departments using suitable apportion bases. Table 1 contains the details. Using the above procedure, the expenditure incurred in these departments is collected under two cost pools, viz., direct departmental costs and factory administrative overhead collected under other indirect departments. The factory administrative overhead is further allocated to the direct departments based on direct labour hours. Thus all the overheads finally accrue to the direct departments as the net expenditure.

Labour hour rates for each direct department and for the division

The labour hour rate for each direct department is obtained by dividing the net expenditure by the direct labour hours. Similarly, *the composite labour hour rate* for the entire division is computed by dividing the net expenditure for the entire division by the total direct labour hours.

It is not uncommon to adopt a supplementary rate. Based on the revenue budget, the labour hour rate is determined at the beginning of each financial year. At the end of the year, the actual labour hour rate is computed based on the actual expenditure. The under/over absorption of overhead expenditure is worked out with reference to the actual labour hour rate. Only when the difference in absorption is more than one percent, the supplementary rate is applied.

Product costing

The total cost of sales for a product is arrived at in the following manner:

- The direct material and direct labour costs are obtained based on the specifications of the product.
- The unit material cost is taken and material overhead is computed based on MOH%.
- The labour hours multiplied by the composite labour hour rate gives the factory overheads.
- Other costs such as tooling, financing, sales over head, and warranty are added based on the percentages determined.
- The sum of all the above items is the cost of sales for the product under consideration.

Figures 1, and 2 are the schematic representation of the existing costing system at ABC. Table 2 has the cost details for the year 1994-95.

User Perceptions

The task force (TF) had a series of meeting with the various “user groups” of the information currently generated by the costing system. The purpose of the meeting was two fold: firstly to know what they felt about the existing system and secondly to understand how the cost would behave in their perspective. The first to meet was Mr. B K Jain, who heads the recently constituted products cost reduction cell.

BKJ: I find myself in a paradoxical state ever since I took over this cell. The existing cost system does not give any clue about where our money is running into the drain. Whenever I initiate a cost reduction exercise, the existing costing system indicates two ways of reducing costs: reduce the material cost to get the double benefit of low material cost and low material overheads or reduce the labour hours per product so that labour costs and other overheads come down. To me both appear to be unrealistic. Tell me how much of saving of labour hours is possible. I do not want to rub my shoulders with the union leader and GM (Personnel) on the issue of standards and incentives.

Mr Ranjan Das, the Chief of Manufacturing at ABC-EM had a different story to say:

RD: I have been working in this organisation for the last twelve years. I have not been able to understand one simple thing. There are different types of costs incurred and costing system should take these into consideration. I will mention two types of overheads. One set of overheads will be more when less of a product is produced and the other set of overheads will be more because it is produced using CNC machines.

Last year we produced four numbers of HL2020 and 175 of LC45R. The costing system should distribute more overheads to the first product because manufacturing in low volumes, as you might know, typically involves a greater degree of customisation. This would mean a lot of effort in design, production planning, purchase, and production control. However, the unit standard labour hours per equipment for the two categories were 1542 hours and 7941 hours respectively. I feel that the product costing has favourably biased the HL2020 category and adversely biased LC45R. Ironically the competition in LC45R is pushing us out of the market due to high price.

Similarly, ideally, I would imagine a costing system to distribute more overhead on a product that is being produced using the computer controlled NC machines. The high capital investments and high maintenance costs would result in heavy over heads. On the contrary, the existing costing system would allocate very less since the direct labour hours will be less in this highly automated set up. Take the example of the products HL2025L and LC42RF. Last year 50 of LC42RF and 100 of HL2025L were produced. To my surprise, the LC42RF, which is produced on traditional machines is charged more with overheads. With the result

the product cost is higher than what it ought to be. I have pointed out this many times but nobody seems to be taking a note of it.

The task force also met with the Design and Planning departments to know what they felt about the costing system. They came out with a new dimension to the problem:

“If you carefully look at the activities at the design department you will notice a few interesting things. The costs incurred in this department are a function of two factors. Firstly, the maturity level of the product is an important cost driver. You may remember that only last year we introduced model HL2025L. You should have visited our department around that time. More or less the whole department was working on that. Even today, we have not stabilised on that product yet. There are substantial revisions in specifications. On the other hand, the oldest of our product range LC42RF and LC45R deserves no attention. Occasionally there will be some requirements for customisation. The impact on the planning department could be no different. The learning curve effect influences both these activities.

The second dimension is the number of parts. If a product has more number of parts, then the design effort in terms of preparation of drawings, and material and process specifications is more. Also, in our experience, the chances of design changes are more in a product that has more part numbers. The planning efforts also follow the same pattern. More part numbers would mean more job cards, more process plans, more progress chasing etc.

There should be a way by which these considerations find place in the costing system. Only then designers will have a motivation to come out with newer and better design of products that employ fewer number of parts.”

The task force met with the marketing, stores, and purchase executives also.

One of the task force members had the following to comment on the exercise that they undertook.

“The idea of talking to the various user groups before proposing the new design was good. Without that we would not have understood the inadequacies of the existing system. I have been in the accounting function preparing the monthly cost reports without understanding these problems that the users face and the new requirements.”

Recommendations of the task force

The task force completed its detailed discussions with all the manufacturing support functions in the complex. The task force noted that with the rapid advances in machine tool technology, automation in manufacturing was on the increase in the organisation in recent years. While the direct labour effort in manufacturing is on the decline, the overhead is on the increase because of high capital costs and maintenance of these equipment. Collecting and processing information related to various activities is lot more easier due to advances in computers and other electronic monitoring devices.

The task force then proceeded towards re-designing the existing costing system in the light of the new developments in the market in which ABC-EM is operating. It has not been an easy choice. For example, there was a constant debate on the extent of details to which the costs are to be collected and aggregated for reporting. There were also debates on the nature of cost drivers to be chosen.

The task force realised that with overheads forming greater percentage of product costs (as compared to labour costs), overhead allocation assumes greater importance. The task force finally came up with several measures that would overcome the limitations of the existing costing system to a large extent. The following are the salient aspects of the proposed changes:

- With a view to eventually move towards activity based costing system, attempts will be made to introduce new cost drivers that are representative of the ground realities.
- Support departments that have significant differences in the manner in which they serve the various product families will be the candidate areas for new cost drivers.
- Once the new cost drivers are identified, estimate of cost incidences for each of these drivers will be prepared to identify priority areas for cost reduction.
- Based on this information, these departments will be required to prepare detailed and specific action plans for cost reduction.

Table 3 shows the new cost drivers developed by the task force. These cost drivers will replace the existing two cost drivers, viz., MOH% and Composite Man Hour Rate.

A detailed description of these cost pools and the rationale of the cost drivers was given by the task force.

1. Manufacturing Overheads

This comprises of depreciation of plant and machinery, consumables and tools, repair and maintenance of machines and service charges for sale of scrap. The task force felt that all these expenses are predominantly driven by the number of machine hours and chose it as the cost driver.

2. Planning & Design

All expenses related to these departments were extracted from the expense ledger. After detailed discussions with the department personnel, it was understood that the involvement of these two departments generally reduces with the maturity of the products. In order to use this information, the task force devised a table that relates the maturity to overhead absorption in the manner depicted below:

Cumulative number of equipment manufactured	Factor
Equipment under development	1.50
Number produced < 50	1.00
Number produced 51 – 500	0.50
Number produced 501 – 1000	0.33
Number produced 1001 – 1500	0.25
Number produced > 1500	0.20

Moreover, the number of parts per equipment was also considered to be another cost driver for these two departments. This was based on the premise that as there are more parts, there will be more design and planning efforts in these departments. The cost driver will be the number of parts multiplied by the factor of product maturity.

3. *Production Control*

The taskforce identified two key documents that drive the cost in this department. These include job cards (**J/Cs**) and material requests (**MRs**). Hence the number of documents was the cost driver for this department.

4. *Inspection*

The cost for this department was extracted from the expense ledger. 10% of the total cost was assigned to material over head I under receiving inspection. The balance was allocated using the number of job cards as the cost driver. This cost driver was chosen as each job card triggered all the required activities in the inspection department.

5. *Material Over Head I (MOH-I)*

The entire material over head was split into two³. The first component comprises of all expenses related to follow up and receipt of the material. These included, postage, telegram, Fax, travel expenses, purchase stores, receiving inspection etc. As the number of receipt reports (**RRs**) indicate the number of times the material is received, it was chosen as the cost driver.

³ There was a considerable debate among the task force with regard to the need for splitting MOH into MOH – I and MOH – II. Some task force members were of the opinion that it was not required. Finally, it was agreed upon the fact that items under MOH – I have scope for continuous reduction by operational and procedural improvements and hence justify the case for separating them out.

6. Material Over Head II (MOH –II)

These costs primarily comprise of entry taxes and bank charges. In addition other expenses such as material insurance are also included. All these expenses are related to the value of the materials. Hence the value of materials was chosen as the cost driver.

7. Diesel Charges

While analysing the various costs, the task force identified that a considerable portion of the manufacturing overhead related to material handling charges. Forklift trucks were used to transport components and sub-assemblies to various parts of the manufacturing set up. The task force felt the need for gearing up a separate overhead pool for this purpose and proposed the number of manufactured parts as the driver⁴.

8. Direct Labour Support

These costs comprise of wages and salaries of direct supervision and benefits like family pension, PF contribution etc. given to the direct workers. More direct hours would generally mean more workers and hence more will be these support costs. For this reason, direct labour hour was chosen as the cost driver for this cost pool.

9. Administration & Welfare

These costs comprise of wages of all officers, indirect workers, welfare expenses, depreciation of land and buildings, property taxes, legal expenses etc. As these expenses are often attributable to the whole division, the sum of the other overheads mentioned above was taken as the cost driver.

Based on the above definition of cost pools, the costs were extracted from the expenses ledger and cost per unit of the chosen cost driver was computed for all the above cost pools. The results are given in Table 4.

Break up of cost incidences under the revised costing system

The task force computed the cost for the various products using the revised scheme of costing. Moreover, the entire overhead was analysed under the new heads identified. Figure 1 is a graphical representation of the information obtained from the new system. The following were the major findings of the task force:

⁴ This cost driver was eventually responsible for triggering some studies on the layout of the manufacturing system.

- On analysis of the total expenses for the year 1993-94, it was found that overheads contributed to 30.5% while the direct labour was 15.8%. Further break-up of the overheads using the new cost pools revealed the following.
- Manufacturing overheads account for 23.2% of the total overheads incurred.
- When cost pools such as Design & Planning, Inspection, Production control, Inspection and material handling are added to this, it constitutes about 33.1% of the total overheads
- MOH – I forms about 10% of the total overheads. These are driven by the number of RRs raised, which often results in excessive follow up for material.

Furthermore, the task force recomputed the costs of the product using the old scheme and the new scheme. It was felt that a comparison of these two would provide an additional validation to the proposed method. Table 5 has the details. The findings of the task force were circulated to the departmental heads of the various functions. It was felt that such a step is required for eventual user acceptance and speedy implementation.

User's reactions to the proposal

There was a general feeling that the new cost system is more reflective of the realities. However, the revised cost estimates seem to have created more problem than what the task force expected.

The increase in the cost of some models meant differently to different people in the organisation. The marketing group felt that such an increase in the cost will jeopardise there already difficult selling efforts as customers may not be willing to pay any more. The marketing chief felt that while the company is already perceived as a high cost producer, these additional cost increases are not sensible for the business.

The manufacturing group began to feel the pressure arising out of these new cost estimates. The manufacturing group would eventually the face the brunt of the eroded profitability of the product lines and will be expected to devise methods to enhance the productivity. In their opinion, they have already reached the limits of productivity.

The accounting and control function would have probably found some new means for identifying high cost areas. But changing the existing system to the proposed system, according to them could be a daunting task. It may call for additional efforts. The monthly reporting procedure can not wait for these changes. How to handle the balancing act was the question that they were asking to themselves.

Future Course of Action

The task force was expected to implement the system. The system was expected to help identify and initiate measures for cost cutting. Several important questions ran in the minds of the members of the task force. What are the likely implementation hurdles? How do we use the information provided by the new costing system to identify areas for cost reduction? What are the likely changes required in the organisation to reduce the cost in the chosen areas? Who will take the ownership for cost reduction initiatives?

Figure 1: Existing Costing System -Overhead Estimation

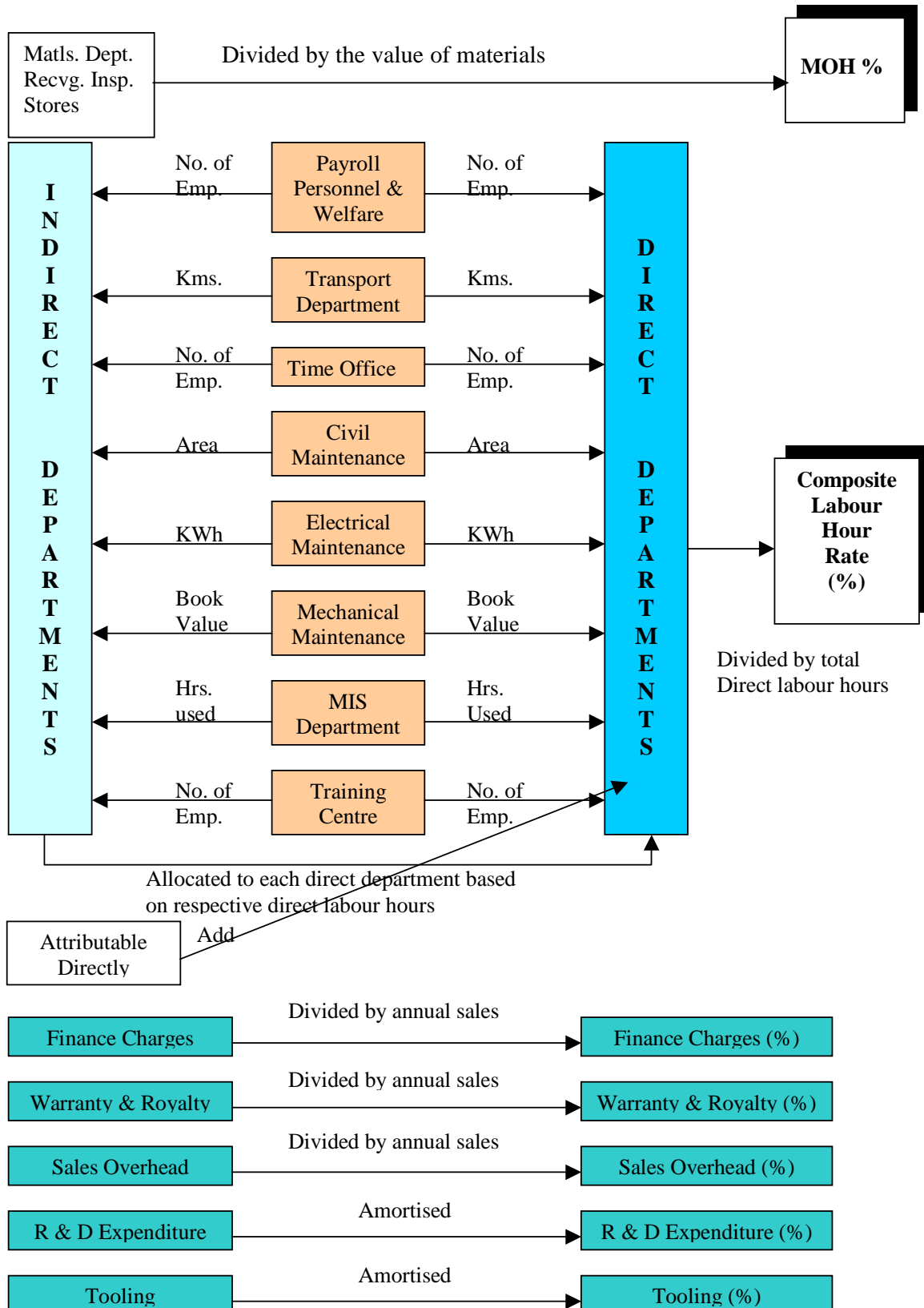


Figure 2: Existing Product Costing System

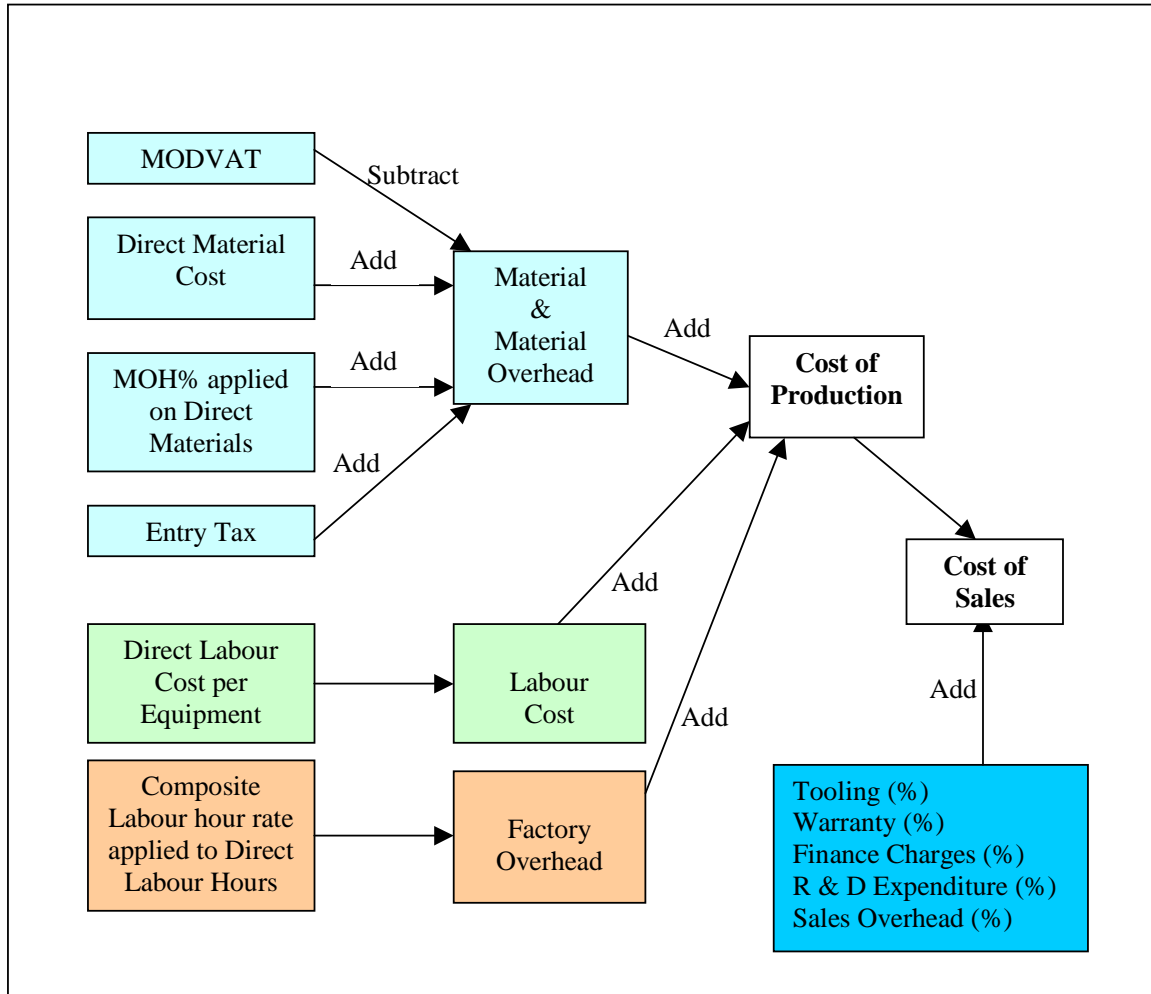


Figure 3. A break-up of the overheads in the proposed system

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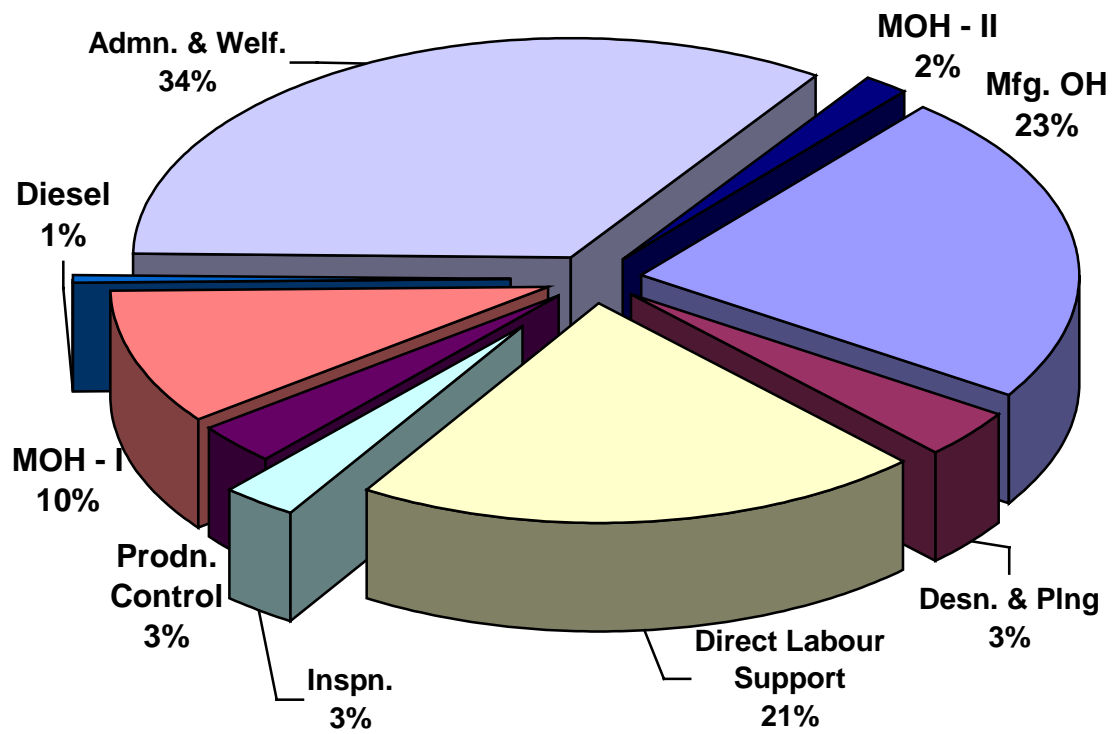


Table 1

Apportion bases for allocation of indirect department costs to the other departments.

Sl. No.	Indirect department	Apportion base
1	Payroll, Personnel & Welfare	Number of employees
2	Transport	Service rendered (in Kms)
3	Time keeping	Number of employees
4	Civil maintenance	Area occupied
5	Electrical maintenance	Load in Kwh
6	Mechanical maintenance	Original book value of plant & machinery
7	Training centre	Number of employees
8	MIS Department	Hours utilised

Table 2. ABC Transport Equipments Ltd. - Product cost details for the year 1994-95.

Sl. No.	Product	Qty.	Labour Hrs.	Labour +other OH Rs (000)	Material + MOH Rs (000)	Other costs Rs (000)	Tooling Rs (000)	R&D Rs (000)	Fin. Chg. Rs (000)	Sales OH Rs (000)	Warranty Rs (000)	Cost of product Rs (000)	Price Rs (000)	Profit Rs (000)
1	LC45R	175	1389599 7941	96051 549	62724 358	816 46	2100 12	4919 28	14663 83	2155 12	0	183429 1048	236792 1353	53363 305
2	LC42RF	50	524228 10485	34961 699	36229 724	296 59	600 12	1964 39	5853 117	860 17	0	80766 1615	94532 1890	13766 275
3	LC48F	50	490974 9819	32812 656	27971 559	443 88	600 12	1863 37	5553 111	816 16	0	70060 1401	89691 1794	19630 393
4	HL2025L	100	985959 9860	67097 670	53355 533	590 59	1200 12	3636 36	10837 108	1592 16	0	138308 1383	175007 1750	36399 367
5	RR50T	20	48284 2414	4521 226	12683 634	157 8	500 25	483 24	1441 72	211 10	0	19999 999	23277 1164	3279 164
6	TAR6	3	5079 1693	572 191	3712 1237	0 0	36 12	156 52	466 155	68 23	278 93	5291 1763	7539 2513	2248 749
7	HL2020	4	6168 1542	681 170	5108 1277	31 8	48 12	127 32	380 95	56 14	227 57	6658 1664	6148 1537	(510) (127)
8	RDHR	4	20943 5236	2072 518	48538 12134	423 106	88 22	1420 355	4232 1058	622 155	2520 630	59917 14979	68356 17089	8439 2110
9	AW2090	11	52985 4817	3378 307	11161 1014	364 33	0 0	267 24	797 72	117 11	474 43	16560 1505	12872 1170	(3688) (335)
10	Spares											36907	34672	(2235)

Note: The per unit and the total cost figures do not match due to errors in rounding them off to the nearest thousand rupee.

Table 3. Nine cost pools & Nine cost drivers in the place of two

Description of the cost pool	Cost Driver
Manufacturing OH	Machine Hours
Planning & Design	No. of part numbers, Product Maturity factor
Production Control	No. of job cards
Inspection	No. of job cards
Materials OH – I	No. of receipts
Materials OH –II	Value of materials
Diesel Charges	No. of manufactured parts
Direct Labour Support	Direct Labour Hours
Administration & Welfare	Total of above Overheads

Table 4. Cost per unit of the chosen cost drivers

No	Cost Pool	Cost Driver	Cost per unit of the cost driver
1	Manufacturing Overhead	Machine Hours	Rs. 35.90 per m/c Hr.
2	Design & Planning	No. of part numbers x maturity factor	Rs. 332.19 per part number
3	Inspection	Number of Job cards	Rs. 45.77 per J/C
4	Production Control	Number of documents (No. of J/Cs + No. of MRs)	Rs. 45.95 per document
5	MOH – I	Number of RRs	Rs. 2260.99 per RR
6	MOH – II	Value of material	Rs. 0.012 per rupee of material
7	Diesel Charges	Total number of parts	Rs. 10.68 per part
8	Direct Labour Support	Labour Hours	Rs. 10.28 per labour hour
9	Administration & Welfare	Total of above overheads	Rs. 0.54 per rupee of the total of other overheads

Table 5. The cost and price of products as per the old and the new costing system

Model	Cost		Price (Rs Lacs)	Quantity sold
	Before (Rs Lacs)	After (Rs Lacs)		
LC45R	10.48	9.82	16.34	175
LC42RF	16.15	16.34	18.91	50
LC48F	14.01	14.80	17.94	50
HL2025L	13.83	13.72	17.50	100
RR50T	10.00	10.42	11.64	20
TAR6	13.23	24.60	18.85	4
HL2020	16.65	19.70	15.37	4
RDHR	149.80	144.09	170.90	4
AW2090	15.06	14.04	11.70	11

Annexe 1

A schematic representation of the competitive position of ABC-EM

