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SIX

A COMPUTATION OF COST FOR INSTALLATION OF COSTING SYSTEM

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CHAPTER SIX

A COMPUTATION OF COST FOR INSTALLATION OF COSTING SYSTEM

6.1 In this chapter an attempt has been made to compute the cost of units under study. In doing so the obstacle was that of lack of information in terms, some expenditure items which were assumed on the basis of present market trend or the existing norms.

Considering the proforma given by the authors Venkataraman K.S. and Balaraman K.S. in Estimating Methods and Cost Analysis for Printers' published in January 1987, First Edition Page 32. The cost computation has been done as per the following tables.

TABLE 15

FIXED DIRECT COST OF TYPES AND THE COMPOSING ROOM FURNITURE

Particular	Government	Co-operative	Private	Partnership
1. Investment in Types and Equipment	12,000	62,000	60,000	50,000
2. Depreciation 20% in general	22,400	12,400	12,000	10,000
3. Interest on Investment 18%	20,160	11,180	10,800	9,000
4. Insurance 0.35% (considerable rate)	390	220	210	180
5. Cost of Direct Labour Compositor Single				
Average = Total Emoluments / No. of employees	12,650	14,400	9,000	9,600
Proof Reader	18,500	-	10,800	7,200
Total :	1,86,100	1,00,200	1,02,810	85,980

TABLE NO. 16 -18

FIXED INDIRECT COST OF TYPES AND COMPOSING

SECTION FURNITURE

Particulars	Government	Co-operative	Private	Partnership
1. Salaries & wages Service Deptt. & Other	1,12,000	62,000	60,000	50,000
2. Rent for Factory Admn. Premises	-	12,000	14,000	-
3. Insurance other than Machinery	14,000	12,400	10,000	9,500
4. Factory Maintenance	-	-	-	-
5. Repairs & Renewals	35,000	4,600	25,000	3,000
6. Electricity and Lighting	50,000	9,900	16,500	10,000
7. Travelling and Conveyance	9,000	2,300	30,000	10,000
8. Running Cost and Maintenance of Vehicle	-	-	-	-
9. Municpal Rates & Taxes	1,000	300	2,000	7,000
10. Indirect Consumable (like oil greece, cotton waste, kerosene) actually not given but assumed @ 1% on cost of machinery	14,700	4,000	20,000	5,500
11. Depreciation of Assets other than machinery	64,000	1,200	3,000	36,500
12. Stationary and office expenses	3,000	1,200	2,000	400
13. Postage	19,800	2,100	8,000	200
14. Telephone	18,000	-	-	8,400

Particulars	Government	Co-operative	Private	Partnership
15. Interest on working capital	-	-	-	-
16. Bank charges	-	-	-	-
17. Legal charges	-	-	4,500	2,000
18. Audit fees	16,000	-	1,000	1,500
19. Bad Debts	-	-	-	-
20. Miscellaneous	-	-	-	-
Total :	6,61,500	85,000	2,50,000	1,56,000

6.2 Assuming that the proportion between manual operation and machine operations in a year in the unit is 1:9 i.e. 10% of the above total fixed indirect cost i.e.

TABLE NO. 19

Particulars	Government	Co-operative	Private	Partnership
Fixed Indirect Cost	$\frac{661500}{1} \times \frac{1}{10}$	$\frac{85000}{1} \times \frac{1}{10}$	$\frac{250000}{1} \times \frac{1}{10}$	$\frac{156000}{1} \times \frac{1}{10}$
	= 66150	= 8500	= 25000	= 15600

This cost will have to be recovered from the charges made for manual operations and the balance that is

TABLE NO. 20

Particulars	Government	Co-operative	Private	Partnership
Fixed Indirect cost balance	5,95,350	76,500	22,5000	1,40,400

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SHIVAJI UNIVERSITY LIBRARY KOLHAPUR

The cost will have to be recovered from the charges for machine operation.

Further assuming that manual operations of composing will constitute 2% of the output (out of this balance ramined after deducting 10%) Hence 2% of charges for machine operations (which constitures the total fixed in direct costs in the imaginary units) which will be

TABLE NO. 21

Particulars	Government	Co-operative	Private	Pattnership
Manual Composition figures rounded	11,900	1,530	4,500	2,800
Variable costs:	a) Cost of exclusive Direct Consumables Printer can evaluate the cost of recasting types in a year inc ude here			- Nil
	b) Power			- Nil

TABLE NO. 22

Particulars	Government	Co-operative	Private	Partnership
1. Total of Fixed Direct Cost	1,86,100	1,00,200	1,02,800	86,000
2. Total of Fixed Indirect Cost	11,800	1,500	4,500	2,800
Total :	1,98,000	1,01,700	1,07,300	88,800

In single shift working the manual composing section will be as follows :

TABLE NO. 23

Particulars	Government	Co-operative	Private	Partnership
No. of days	300	300	305	305
Working hours per day	8	7.1/2	7	8
Total working hours	2400	2250	2135	2440
Assuming 75% working capacity (Rounded nearest decimal)	1800	1650	1600	1830

Hence the composite cost per hour for the compose section will be :

TABLE NO. 24

Particulars	Government	Co-operative	Private	Partnership
Total cost i.e. direct and indirect	1,98,000	1,01,700	1,07,300	88,800
Divide by No. of Days	1,800	1,690	1,600	1,830
Composite cost per hour for this manual compose	110	60	67	48

With the composite cost per hour for this manual compose section as ascertained above the cost for any given job can be derived by computing time taken for given job will take for manual composition including time for proof correction.

6.3 Costing of machine operations that is printing of the jobs. The composite machine hour rate to be recovered from the print job for every hour of use of the particular machine.

Let us take the machine hand fed semi automatic letter press cylinder machine (63. x 5 x 96.5 cms)

TABLE NO. 25

Particular	Government	Co-operative	Private	Partnership
1. Cost of machine	1,68,000	1,63,000	1,65,000	1,62,000
2. Fixed Direct cost :				
a) Interest 18% p.a.	32,240	29,340	29,700	2[illegible].160
b) Depreciation at given rate 20.33.1/3	16,800	32,600	33,000	32,400
c) Insurance @ 0.35%	590	560	580	570
d) Cost of Direct labour	13,370	15,500	12,020	9,770
Average $\frac{\text{Total Emol.}}{\text{No. of employees}}$	61,000	78,000	75,300	82,800
3. Other benefits @ 30% 20% i.e. leave with pay of the above 300 working days i.e. 90 days leave with pay hence for 100 $\frac{100}{300} \times 90$	18,300	15,600	15,160	16,440

Particulars	Government	Cooperative	Private	Partnership
4. Fixed Indirect cost i.e. 1/32 Allocation is made on the basis that total fixed cost indirect cost divided by total of all machine impressions per hour	20,670 (1/32)	7,730 (1/18)	13,900 (1/18)	9,750 (1/16)
5. Variable cost :				
a)Cost of Exclusive Direct consumption Makes (Cost of re-rubbering rubber rollers assumed)	2,030	970	840	400
b)Impression cylinder packing sheets of paper assumed consumption	600	200	200	200
Total :	1,02,600	1,02,500	1,05,400	1,09,590
Divide by No. of hours	1,800	1,690	1,600	1,830
Composite cost per hour	57	60	66	60
Power Machine Rating	3	3	3	3
3.5 Km power consumption 3.5 units per hour cost per hour 3.5 x 0.85				
Total Cost per hour:	60	63	69	63

From the above study of composing cost per hour and machine cost per hour of selected units of press it shows that the cost differs from each other. This is quite clear that the units under comparision are of different nature but the principle of costing will show that if the organisation is well established and have more investment it will reduce the cost. This will show under the following study.

6.4 Analytical statement of composing labour hour rate and Machine hour rate :

TABLE NO. 26

Presses	Composing labour hour rate Rs.	Machine hour rate Rs.
Government Sector	110	60
Co-operative Sector	60	63
Private Company	67	69
Partnership	48	63

This should be studied that the cost of composing per hour and machine hour rate is calculated on the information given by the organisation in the questionnaire. This information have certain limitation and hence the result may very. But the principle behind the calcultion of cost per hour will remain same every where. Hence certain assumptions are made and this cost per hour is calculated.

The above statement shows that the cost of composition per hour in Government organisation is highest whereas the purely private partnership organisation is lowest. This shows that the establishment and administrative expenditure increased the cost of Government organisation. It is also found that the cost of Government press is more because of well equipped and furniture has been acquired in the press.

Though the cost of Government press will be highest in single job but it will be lesser than other in big job or various job. This will be illustrated on later page.

On comparing the machine hour cost it seems that there do not show much difference irrespective of size of the organisation.

6.5 For the comparative study of cost of different press organisation we shall take one specific job. This job is specified in the following specification card which is called work order.

ILLUSRATION OF JOB ORDER COSTING

TABLE NO. 27

JOB ORDER CARD

Size : Crown 20" x 30"	No. of copies : 10000
No. of printed page : 16	Dimension of page : 24 cms x 34 cms
Type : 12 point pica (running)	Compose : Hand
Paper: White Printing	Style of Binding : Stitching
Paper required : On ream D'crown	Printing ink : Black
Compose time estimated : 42 hours	Printing Impressions: 1000 per first hour & 3000 succeeding hour

Particulars	Time of Beginning	Time of completion	Total hours
1. Compose			
2. Printing			
3. Binding			

Foreman

The above job with details required to complete is taken as an illustration. Let us find out the cost of the job with the rate of material that printing paper and ink will be variable as per the market and binding operation has also variability. Hence these two

factors are not considered for comparative study. Only composing and printing operation are taken for comprative study.

COMPOSE COST

Size	: Double Crown 20" x 30"
No. of pages	: 16
Guage of pages	: 24 cms x 34 cms
Total Ems of page	: 816
Total Ems of page	: 13056
Compose Rate per day	: 2000 cms/ 2200 cms
No. of workers required to finish the job in a day	: $\frac{13056}{2000}$ = 6 workers approximately
Working hours in a day	: 7 hours
Time required to complete the job	: 42 hours

TABLE NO. 28

COMPARATIVE STATEMENT OF COMPOSING COST

Press	No. of workers	Hours of completion	Hours required to complete the job by press	Cost per hour	Total cost
1	2	3	4	5	(4x5) 6
Government	42	42	1	110	110
Co.operative	14	42	3	60	180
Private	14	42	3	67	201
Partnership	12	42	3.1/2	48	168

The comparative statement shows that the Composition Cost per hour in the big concern shows higher than the small concern, but if the job of big size is to complete, that reduced the cost per hour in succeeding production of composing. It is studied that the cost

per hour is Rs. 110/- in Government Sector, Rs. 60/- in Co-operative Sector, Rs. 67/- in Private Sector and Rs. 48/- in partnership Sector, where the number of employees are, 42,14,14 and 12 respectively.

The job under illustration requires 42 hours to complete it. In one hour as 42 employees are there hence cost remains Rs. 110/- whereas Co-operative Sector will complete the job in 3 hours and hence the cost will be Rs. 180/-(i.e. Rs. 60 per hour x 3 hours), Private Company will complete the job in 3 hours and the cost will be Rs.201/- (i.e.Rs. 67 per hour x 3 hours) and Partnership will complete the job in 3.1/2 hours and the cost will be Rs. 168/- (i.e. Rs. 45 x 3.1/2 hour) This shows the difference between small concern and big concern in respect of cost analysis. Therefore it shows that the costing system will be very useful in the big jobs in the long run.

Comparative study of Machine Hour Rate :

Time of Machine : Hand fed : Semi fed taken for comparative cost study

Impressions per hour : 1000 impressions for first hour and 3000 impressions for succeeding hours

TABLE NO. 29

Press	Computed cost per hour Rs.	Required time to print 10000 Imp	Total cost Rs.
Government	60	4	240
Co-operative	63	4	252
Private Company	69	4	286
Partnership	63	4	252

This should be studied the cost of the printing for the required copies of a job under illustration. The comparative analysis of units under the study is made and studied with the computed cost with the help of machine hour rate. This shows that the units under study the same type of machinery is selected, the rate of impression is also same.

The machine hour rate is differed due to the establishment cost of each unit. Hence the only difference in cost is very small.

But it shows that the bigger is the organisation the smaller is the total cost. This is because the equipments are utilised effectively and efficiently.

The scientific costing method that is job costing will be very useful to printing industry to increase the productivity and effectiveness in the management. The profitability if increased the efficiency will also be increased. Hence the job costing system once established in the press that will be more beneficial and economical to the industry as well as society.