Impact of Target Costing and Activity Based Costing on Improving the Profitability of Spinning Mills in Coimbatore - Empirical study on Spinning Mills

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ABSTRACT

Rapid developments in Technology, change in customer expectations, shortening product life cycles and especially increasing global competition force the companies reach the targets of "low cost, short time and high quality" at the same time and the highest level possible. Therefore, companies utilize the modern management accounting techniques in achieving these goals. One of the most important among these methods is "Target Costing". Target Costing can boost the bottom line of the balance sheet. Activity Based Costing information is being used for Target Costing. The objective of this thesis is to demonstrate the use of the Activity-Based Costing (ABC) approach together with the Target Costing philosophy in determining the optimal product-mix to improve the profitability of the Textile Spinning Mills in Coimbatore.

Introduction

Activity Based Costing

Traditional cost accounting has been criticized for cost distortion and the lack of relevance during the last 20 years (Johnson and Kaplan 1987). A traditional system reports where and by whom money is spent on, but fails to report the cost of activities and processes (Miller 1996). Many organizations, including petroleum and semiconductor companies in the manufacturing industry, have adopted the new costing method, activity based costing (ABC).

There are two purposes of activity-based costing. The first is to prevent cost distortion. Cost distortion occurs because traditional costing combines all indirect costs into a single cost pool. This pool is allocated on the basis of some resource common to all of the company's products, typically direct labor. Cost distortion is prevented in ABC by adopting multiple cost pools (activities) and cost drivers. The second purpose is to minimize waste or non-value-adding activities by providing a process view. This objective can be achieved by activity analysis and (or) the function of monitoring activities.

Activity Based Costing - Two Step Costing System

ABC is a two-step costing system that assigns costs to products according to the demand each product makes on all of a company's varied resources. The first step of the ABC method is to identify activities and their related costs. Activities are defined as what an employee spends time doing at a company. ABC revolves

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around identifying significant activities within the preproduction, production, and postproduction processes. Some products or customer costs include both pre- and postproduction efforts, such as engineering and advertising. Generally, traditional costing systems do not address these costs.

The second step of the ABC method is to assign those activities and their related costs to products, channels, and customers via cost drivers.

- Products are the goods or services a company produces.
- Channels are the different methods of distributing those products to customers through catalog, retail, or wholesale sales.
- Customers are those who purchase or use a company's product or services.
- Cost drivers are the factors or events that trigger an activity to happen or cause an expense to be incurred, such as the number of products produced, the number of purchase orders, or the number of transactions handled.

ABC is a tool that is used to identify and prioritize cost reduction opportunities through cost driver analysis.

Why is Activity-Based Costing Important?

You can't compete or even begin to compare until you know how to cost. ABC is a cost accounting methodology that can provide definitions of processes, identify what the cost drivers of those processes are, determine the unit costs of various products and services, and create various reports on agency components that can be utilized to generate activity- or performance-based budgets.

A major advantage of using ABC is that it avoids or minimizes distortions in product costing that result from arbitrary allocations of indirect costs. Unlike more traditional line item budgets which can't be tied to specific outputs, ABC generates useful information on how money is being spent, if a department is being cost-effective, and how to benchmark (or compare) oneself against others for quality improvement.

Activity-Based Costing also provides a clear metric for improvement. ***It encourages management to evaluate the efficiency and cost-effectiveness of activities.*** Some ABC systems rank activities by the degree to which they add value to the organization or its outputs. This encourages managers to identify what activities are really value-added in order to accomplish a mission, deliver a service, or meet customer demand, thus improving decision making through better information, and helping to eliminate waste by encouraging employees to look at all costs. That is why an essential aspect of any ABC endeavor is to get a clear picture of the activities a business area performs. When employees understand the activities they perform, they can better understand the costs involved.3

Target Costing

According to the CIMA Official Terminology a Target Cost is 'a product cost estimate derived by subtracting a desired profit margin from a competitive market price.'

Target costing is a technique which developed in the early 1970s in Japan's manufacturing industry as consumer demand for more diversified products and shorter product life cycles made the development and planning stages of new products more important. At the same time

increased automation and decreased labor costs made standard costing less important as the main method of cost management within manufacturing companies. It was also recognized that the major part of product cost (around 80%) is determined at the design stage and that cost management needed to start earlier in the process. Sakurai (1989) defines target costing as a 'cost management tool for reducing the overall cost of a product over its entire life cycle with the help of the production, engineering, R&D, marketing, and accounting departments'.

The use of target costing spread as increased competition, and shorter life cycles, in global markets meant that companies needed to manage costs from the design stage forward, and launch products at prices to attract customers and forestall imitation. Target costing as a technique to achieve these aims spread into other countries and industries.

A review of the literature, however, reveals that target costing is not seen as a technique for cost control but a management process which involves all disciplines and brings a focus on the customer from the beginning of the design process. Cooper and Chew (1996) describe the value of target costing as its 'ability to bring the challenge of the marketplace back through the chain of production to product designers.'

The target costing process Historically, target costing has been developed and used in manufacturing companies, and therefore the language used to describe it in the literature, and in this part of the discussion paper, reflects that. Later sections of the paper will consider the application in service oriented organizations.

There are a number of stages in the process of target costing, as described by Gagne and Discenza (1995):

1. Establish a selling price for the new product and estimated sales volume from an analysis of the market, and a target profit.
2. Determine the target cost by subtracting the profit from the selling price.
3. Perform functional cost analysis for individual components and processes.
4. Determine the estimated cost for the product.
5. Compare estimate with target.
6. If estimated cost exceeds target cost, repeat cost analysis/value engineering to reduce estimated cost (an iterative process).
7. Make the final decision whether or not to introduce the product once cost estimate is on target.
8. Manage costs during production of the product.4

Purpose of this study

Activity Based Costing (ABC Costing) techniques is a modern costing technique which will give more accurate prediction of costing than any other methods . When ABC Costing is integrated with Target Costing , it is a useful tool to improve the profitability of the organization by three ways

(1) Eliminating Low margin/Loss making counts

(2) Reducing the cost of manufacturing to meet the cost of the market

(3) Introducing the new product with a better margin

Hence it is an effective tool for achieving objectives of the organization by modern ways "Management

by Objectives". Worldwide implementation of Activity Based costing and Target costing was found to be difficult. If implemented will be a turn around for Textile industries.

Hence an attempt was made to implement Activity Based Costing and Target costing in Textile Spinning mills to achieve better margin .

Objectives

1. Predicting the product cost more accurately.
2. Help the industry to meet the competition in an effective way.
3. Cost reduction.
4. Budgeting and performance measurement.
5. Identifying the new products for future growth.

Review of Literature

A Brief History

As originally introduced in the 1980s, ABC corrected serious deficiencies in traditional standard-cost systems. The traditional systems typically used only three cost categories: labor, materials, and overhead.

While manufacturing companies could generally trace the labor and materials used by their individual products, their cost systems allocated the indirect and support costs-the "overhead"- with measures already being recorded, such as direct labor hours and direct labor dollars.

As the direct labor content of products decreased, through automation and industrial engineering-driven efficiencies, the percentage of total costs represented by the somewhat arbitrary allocations of overhead had continually increased during the twentieth century. In addition, many companies had shifted from mass-production strategies to those that offered customers more variety, features, and options.

The customer-focused strategy attempted to attract, retain, and grow business by offering services such as the following:

- Producing and stocking a greater variety of products
- Supporting more order-entry and order-tracking channels
- Producing and delivering in smaller order sizes
- Delivering directly to customers' end-use locations, often in expedited and narrow time windows
- Providing specialized technical applications support

All these new services created value and loyalty among customers, but none came for free. To offer the expanded variety and the new options, features, and services, companies had to add (overhead) resources for engineering, scheduling, receiving, storage, inspection, setup, materials handling, packaging, distributing, order handling, marketing, and selling. Overhead costs increased both relatively and absolutely as companies diversified into more product lines, customers, channels, and regions, and offered specialized features and services.

By the 1980s, the standard cost systems designed during the scientific management movement seventy-five years earlier no longer reflected the current economic reality. Companies were now operating with distorted information about the profitability of their orders, products,

and customers For example, while traditional cost systems might show that all customers were profitable, the economic reality was that a minority of customers earned between 150 and 300 percent of profits, and unprofitable customer relationships lost 50 to 200 percent of profits.

Activity-based costing seemingly solved the inaccurate allocation of overhead from standard cost systems by tracing these indirect and support costs first to the activities performed by the organization's shared resources, and then assigning the activity costs down to orders, products, customers on the basis of the quantity of each organizational activity consumed. Managers used the more accurate ABC and profitability information to make better decisions about process improvements, order acceptance and rejection, pricing, and customer relationships. The decisions led to near-term and sustainable improvements in product and customer profitability.

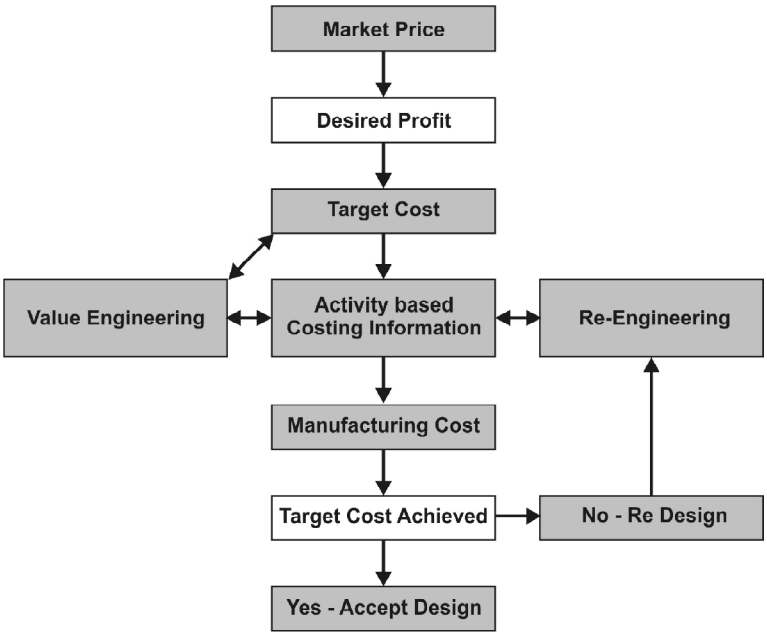
Target Costing

Target costing (TC) is a market-driven strategy. Under this scheme, a firm's product is priced based on the levels that give it the best competitive advantage. Target costs are derived from the target prices. Then a certain amount of desired profit is subtracted from the prices. The resulting target costs are often well below the currently achievable costs, which are based on the standards established by product/process engineers. The target costs thus become both the benchmarks and the driving force for the company's (cost) improvement activities.

Target Cost = Market Price - Desired Profit

First, it is highly recommended that CEA for cost reduction be incorporated with and/or supported by activity-based costing (ABC). For ABC to work well, the activities, the costs, and the relationships between the two must be identified. CEA does just that. It helps identify cost driversthe activities that cause the incurred costs.

Figure 1 : Target Costing Flow Diagram



Need of the study

In the fast changing world , orders are placed with less quantity with short time to complete and when there is no previous data about the product since it is a new product, developing a costing system for a company is very important. Hence , it is felt that a study on Activity Based Costing and Target Costing is very much need of the hour for the Spinning Mills , which is already operating on a thin margin , where even a small mistake on cost prediction will end up loss .

Limitations of the study

1. This study is applied to Textile Spinning Mill only in Coimbatore District.
2. More than 150 cost drivers for every product and hence time consuming.
3. Domain knowledge of both Production and Costing are required.
4. Judgmental sampling is taken for 3 months period only.

Problem Statement

This research attempts to address the knowledge gap on previous researches and answer the following questions.

1. Does the Activity Based Costing method of predicting the expenditure reflect the actual expenditure for Textile Spinning Mill?
2. Can the Target Costing method be used to design a Textile Spinning Mill product competitively?
3. Can the Activity Based Costing and Target Costing methods be used as effective Management tools in improving the profit of spinning Mills?

Methodology

1. Population-Coimbatore District Spinning Mills

A spinning mill in Coimbatore district was taken for implementing the Activity Based costing for their existing products .

2. Sample Size-One spinning Mill

It is a participative study , dealing with huge data collection . Implementing Activity Based Costing is time consuming process and hence only one mill was taken as sample. 3 months periods were taken for this study.

3. Products-Complex Multiple product running mills

The mill was producing wide range of products and hence the outcome of the study will benefit the spinning mill by identifying the loss making products.

4. Primary Data- An empirical study

Direct implementation results were taken for study. Profitability of the products will be analyzed from the Activity Based Costing information.

5. Secondary data-Journals, Magazines, Previous work's results

6. Statistical tool Chi square Test

Profitability of the unit for 3 months period were forecasted using Activity Based costing method and the Actual profits were compared with forecasted value and significance of forecasting is tested by Chi-Square test.

7. Hypothesis

Results were analyzed for

1. Activity based costing method predicting the cost more accurately.
2. Activity Based Costing and Target costing can be used effectively in designing a better profit making products
3. Implementation of Activity Based Costing and Target costing will contribute to improve the profitability of spinning mills

Conceptualization

Spinning Mill Activities	Spinning Mill Resources
Mixing	Raw Material
Blow Room	Labor
Carding	Power
Sliver Lap	Money
Ribbon Lap	Spares
Combing	Machineries
Drawing	
Roving	
Spinning	
Cone Winding	
Packing	

Costing were worked out for activities on the base of time (in this case 8 Hour shift) as directed in the "Time Driven Activity Based Costing" by Robert S. Kaplan and Steven R. Anderson .The product costs were arrived and listed below for a Spinning mill in Coimbatore.

Analysis

Table 1

Activities	Head wise Cost/Kg of Yarn									Total
	Power	Wages	Stores	I.Labr	Sale.C	Staff	Admin	Int.	Deprc	Rs/Kg
Mixing	0.17	3.94	0.00							4.12
B. Room	0.80	0.55	0.04							1.39
Carding	2.99	1.08	0.78							4.84
SliverLap	0.16	0.17	0.03							0.37
Rib. Lap	0.12	0.17	0.03							0.32
Comber	1.86	0.93	0.52							3.31
Drawing	0.59	0.32	0.02							0.93
Simplex	1.46	1.22	0.36							3.03
Spinning	52.00	9.94	3.16	1.10	5.33	8.78	30.72	26.33	137.36	
Cone	7.07	2.65	0.53							10.25
Packing	0.00	0.11	4.00							4.11
Sale Exp.	0.00	0.00	0.00		4.05					4.05
TOTAL	67.21	21.09	9.46	1.10	4.05	5.33	8.78	30.72	26.33	174.08
					Raw Material Clean Cotton Rs/Kg					213.12
					Total Manufacturing cost - Rs/kg					387.20
					Yarn selling Price - Rs/Kg					405.00
					Net Profit - Rs/Kg					17.80

Table 1 showing the ABC costing of a spinning mill product , 100s combed cone yarn.

This product will make a net profit of Rs 17.80 per kg of yarn.

Cost Prediction

By this way , the cost of the products are predicted more accurately according to the activities which is controlled by nearly 150 cost drivers for each product. This method of Costing will help us in finding out the loss making products and customers .

A budget/forecast was prepared and it was compared with the actual results of a month as listed below.

Activity Based Costing - Table 2

No of Fr	1	1	4	2	4	3	1	1
Mc Make	LRG5	LRDJ5	G5/LR6	LR6	LR6	Sussen	LR6	LR6
Spls/Mc	1200	432	1200	1200	1200	960	1056	960
Allotted	1200	432	4800	2400	4800	2880	1056	960
Gms/Spl/8h	28.78	30.36	30.36	30.36	28.43	18.64	37.43	37.43
Kgs/day	93	35	393	197	368	145	107	97
Activities	50s cbd	100s cbd	100s cbd	2/100 c TFO	105 cbd	120s cbd CP	80s cbd CP	80s cbdcbd CP
Mixing	4.12	4.12	4.12	4.12	4.12	4.40	4.12	4.12
B. Room	1.39	1.39	1.39	1.39	1.38	1.49	1.39	1.39
Carding	4.84	4.84	4.84	4.84	4.62	5.18	4.84	4.84
Sliver Lap	0.37	0.37	0.37	0.37	0.36	0.39	0.37	0.37
Rib. Lap	0.32	0.32	0.32	0.32	0.31	0.34	0.32	0.32
Comber	3.31	3.31	3.31	3.31	3.16	3.90	3.31	3.31
Drawing	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Simplex	3.03	3.03	3.03	3.03	2.93	3.03	3.03	3.03
Spinning	125.47	137.36	137.36	137.36	145.63	215.33	114.30	114.30
Cone	5.20	10.25	10.25	10.25	10.55	12.24	8.16	8.16
Job work	0.00	0.00	0.00	39.00	0.00	0.00	0.00	0.00
Packing	4.11	4.11	4.11	4.11	1.86	4.11	4.11	4.11
Sale Exp.	3.10	4.05	4.05	4.60	4.25	6.75	3.40	3.40
TOTAL	156.18	174.08	174.08	213.63	180.09	258.10	148.27	148.27
Raw Mat	213.12	213.12	213.12	213.12	213.12	234.23	213.12	213.12
TM. Cost	369.30	387.20	387.20	426.75	393.21	492.33	361.39	361.39
Sale value	310.00	405.00	405.00	460.00	425.00	675.00	340.00	340.00
Net Profit	-59.30	17.80	17.80	33.25	31.79	182.67	-21.39	-21.39

Note : Table 2 shows, Activity based costing of 8 products and the allocation of machines to produce these products. The best profit making product is 120s cbd . Profit making products are 120s cbd , 2/100cbd TFO , 105s cbd ,100s cbd . Loss making products are 50s cbd HT and 80s cbd CP. Activity Based Costing information clearly indicates the Profit order of products.

Projected Monthly Profit and Loss Statement

Activity Based Costing

Table 3

Activities	Lakh (Rs.)
Sale value	185.04
Raw Mat	92.73
Mixing	1.79
B. Room	0.60
Carding	2.08
Sliver Lap	0.16
Rib. Lap	0.14
Comber	1.43
Drawing	0.40
Simplex	1.30
Spinning	61.74
Cone	4.27
Job work	2.30
Packing	1.52
Sale Exp.	1.85
TOTAL	79.57
Manu. Cost	172.30
Net Profit	12.74

ABC information converted to Income Statement

Table 4

Description	Lakh (Rs.)
Yarn selling price	185.04
Raw material	92.73
Power	29.47
Wages	9.79
Stores and Repairs	3.72
Job work	2.30
Sale commission	1.85
Total variable cost/kg	139.87
Contribution/kg	45.17
Staff salary	2.43
Administrative	4.00
Interest	14.00
Depreciation	12.00
Total Fixed cost/kg	32.43
Manuf. Cost	172.30
Net Profit	12.74

Note : Table 3 and 4 explain , If the mill spin the above product mix , they may end with a Net Profit of Rs 12.74 Lakhs per month. For comparison the Activity Based Costing information was used to frame on “Income Statement”.

New Product Mix

50s combed and 80s combed were loss making products. With the same set up of machines, an attempt was made to replace these loss making products with a better profit making products. 50s combed frame was allocated to make 2/100s combed TFO yarn and 80s combed frames were used to make 105s combed yarn . Revised forecast was prepared and given below.

Activity Based Costing - Revised Budget : Table 5

No of Fr	1	4	3	4	3	1	1
Mc Make	LRDJ5	G5/LR6	LR6	LR6	Sussen	LR6	LR6
Spls/Mc	432	1200	1200	1200	960	1056	960
Allotted	432	4800	3600	4800	2880	1056	960
Gms/Spl/8h	30.36	30.36	30.36	28.43	18.64	28.43	28.43
Kgs/day	35	393	295	368	145	81	74
Activities	100s cbd	100s cbd	2/100 c TFO	105 cbd	120s cbd CP	105 cbd	105 cbd
Mixing	4.12	4.12	4.12	4.12	4.40	4.12	4.12
B. Room	1.39	1.39	1.39	1.38	1.49	1.38	1.38
Carding	4.84	4.84	4.84	4.62	5.18	4.62	4.62
Sliver Lap	0.37	0.37	0.37	0.36	0.39	0.36	0.36
Rib. Lap	0.32	0.32	0.32	0.31	0.34	0.31	0.31
Comber	3.31	3.31	3.31	3.16	3.90	3.16	3.16
Drawing	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Simplex	3.03	3.03	3.03	2.93	3.03	2.93	2.93
Spinning	137.36	137.36	137.36	145.63	215.33	145.63	145.63
Cone	10.25	10.25	10.25	10.55	12.24	10.55	10.55
Job work	0.00	0.00	39.00	0.00	0.00	0.00	0.00
Packing	4.11	4.11	4.11	1.86	4.11	1.86	1.86
Sale Exp.	4.05	4.05	4.60	4.25	6.75	4.25	4.25
TOTAL	174.08	174.08	213.63	180.09	258.10	180.09	180.09
Raw Mat	213.12	213.12	213.12	213.12	234.23	213.12	213.12
TM. Cost	387.20	387.20	426.75	393.21	492.33	393.21	393.21
Sale value	405.00	405.00	460.00	425.00	675.00	425.00	425.00
Net Profit	17.80	17.80	33.25	31.79	182.67	31.79	31.79

Note : Table 5 shows , the product mix selection after elimination of loss making products. After confirming the marketability and machine availability the above changes were made.

Improved Product mix

Projected Monthly Profit and Loss Statement

Activity Based Costing

Table 6

Activities	Lakh (Rs.)
Sale value	188.89
Raw Mat	89.92
Mixing	1.73
B. Room	0.58
Carding	2.00
Sliver Lap	0.15
Rib. Lap	0.13
Comber	1.38
Drawing	0.39
Contribution/kg	50.32
Cone	4.41
Job work	3.45
Packing	1.36
Sale Exp.	1.89
Manuf.Cost	170.72
Net Profit	18.17

ABC information converted to Income Statement

Table 7

Description	Lakh (Rs.)
Yarn selling price	188.89
Raw material	89.92
Power	29.85
Wages	9.70
Stores and Repairs	3.48
Job work	3.45
Sale commission	1.89
Total variable cost/kg	138.29
Simplex	1.25
Spinning	62.06
Staff salary	2.43
Administrative	4.00
Interest	14.00
Depreciation	12.00
Total Fixed cost/kg	32.43
Manuf. Cost	170.72
Net Profit	18.17

Note : Table 6 and 7 shows that the expected net profit of the spinning mill improved after eliminating the loss making products from Rs 12.74 lakhs per month to Rs 18.17 Lakhs per month.

Budgetary Control using Activity Based costing Information (ABCM)

Budgeted Value Vs Actual Value

Table 8- Chi-Square test

S No	Description	O Observed	E Expected	O-E	$(O-E)^2$	$(O-E)^2/E$
1	November 2010	11.92	12.75	-0.83	0.69	0.05
2	December 2010	13.89	15.23	-1.34	1.80	0.12
3	January 2011	17.11	18.17	-1.06	1.12	0.06
4	Total	42.92	46.15		3.61	0.23

Chi-Square value	0.23
Degrees of freedom = (n-1)=(3-2)	2
Table value @5% Level	5.991

Since the calculated value (0.23), is less than the table value (5.991), the difference between the budgeted and Actual is in significant. Hence Forecasting the product value using Activity Based costing method is very precise and may help the managers in taking the right product decisions.

Profit Improvement

From the Table 8 , it was observed that there was a clear improvement in the profit . The Net Profit has been improved from Rs 11.92 Lakhs of November 2010 to Rs 17.11 Lakhs of January 2011, after the introduction of new product mix. A Profit improvement of Rs 5.19 per month ie 43.54% profit improvement over November 2010.

Target Costing for 100s combed Redesigning

Existing Net Profit / kg of 100s cbd yarn is Rs 17.80 , with reference o the table 5 .The management wants to improve the margin by another Rs 5.00/kg ie 22.80 Profit /Kg of yarn . An attempt was made to make the Targeted profit by re-designing the product using Activity Based Costing information.

Cost driver Re designing / Value Engineering

Table 9 -100s combed cone - Target Costing

Cost Drivers Modification to achieve Target costing
Re-Designing / Value Engineering

S No	Activity	Cost Drivers			
		Existing	Cost-If	Iteration1	Iteration2
1	Carding Doffer speed Mpm	45	50		
2	Comber Nips/Minute	180	200		
3	Drawing RSB Speed- Mpm	300	350		

After careful analysis of Activity Based Costing of 100s cbd cone product's ,Pareto/Cause effect analysis, 3 activities are considered to be the major causes for the cost, which were shown in the table 9. The cost drivers of the activities also listed in the table in the "Existing" column. Some efforts were made to reduce the cost without scarifying on the demanded quality of the product , otherwise called elimination of hidden loses ie Lean Manufacturing by modifying the cost drivers of the 3 activities put together in the Cost-If column. The resultant cost of the product is called Cost-If and the same is tabulated in Table 10.

Table 10 - Cost-If (Cost after Re-design / Value Engineering)

100s combed cone - Cost IF

Activities	Head wise Cost/Kg of Yarn									Total
	Power	Wages	Stores	I.Labr	Sale.C	Staff	Admin	Int.	Deprc	Rs/Kg
Mixing	0.17	3.94	0.00							4.12
B. Room	0.80	0.55	0.04							1.39
Carding	2.69	0.97	0.70							4.36
SliverLap	0.16	0.17	0.03							0.37
Rib. Lap	0.12	0.17	0.03							0.32
Comber	1.67	0.84	0.47							2.98
Drawing	0.51	0.27	0.02							0.80
Simplex	1.46	1.22	0.36							3.03
Spinning	52.00	9.94	3.16	1.10		5.33	8.78	30.72	26.33	137.36
Cone	7.07	2.65	0.53							10.25
Job work	0.00	0.00	0.00							0.00
Packing	0.00	0.11	4.00							4.11
Sale Exp.	0.00	0.00	0.00		4.05					4.05
TOTAL	66.64	20.84	9.33	1.10	4.05	5.33	8.78	30.72	26.33	173.13
	Raw Material Clean Cotton Rs/Kg									213.12
	Total Manufacturing cost - Rs/kg									386.25
	Yarn selling Price - Rs/Kg									405.00
	Net Profit - Rs/Kg									18.75
	Target Profit/Kg - Rs									22.80

As per the Table 10, If the Product is Re-designed as per the change in the cost driver in “Cost-If”, without affecting the customer's expectation in the quality, the expected net profit will be Rs 18.75 against the Targeted profit of Rs 22.80. Hence further Re-designing of the product is required.

Table 11 - 100s combed cone - Target Costing

Cost Drivers Modification to achieve Target costing
Re-Designing / Value Engineering

S No	Activity	Cost Drivers			
		Existing	Cost-If	Iteration1	Iteration2
1	Carding Doffer speed Mpm	45	50		
2	Comber Nips/Minute	180	200		
3	Drawing RSB Speed- Mpm	300	350		
4	Auto cone -Efficiency	70		80	

Table 11 shows, change in cost driver in one of the Activity called Auto Cone to reduce the cost to meet the Target Costing. After Iteration 1 , the net profit was Rs 20.03 against the Targeted Profit of Rs 22.80 and hence further Re-Designing of the Product is required.

Table 12 - 100s combed cone - Target Costing

Cost Drivers Modification to achieve Target costing
Re-Designing / Value Engineering

S No	Activity	Cost Drivers			
		Existing	Cost-If	Iteration1	Iteration2
1	Carding Doffer speed Mpm	45	50		
2	Comber Nips/Minute	180	200		
3	Drawing RSB Speed- Mpm	300	350		
4	Auto cone -Efficiency	70		80	
5	Ring Frame TPI	39.5			38.5

Table 12 shows, change in cost driver in one of the Activity called Ring Frame to reduce the cost to meet the Target Costing as per the column Iteration 2.

Table 13 - 100s combed cone - Re Engineering - Iteration 2

Activities	Head wise Cost/Kg of Yarn									Total
	Power	Wages	Stores	I.Labr	Sale.C	Staff	Admin	Int.	Deprc	Rs/Kg
Mixing	0.17	3.94	0.00							4.12
B. Room	0.80	0.55	0.04							1.39
Carding	2.69	0.97	0.70							4.36
SliverLap	0.16	0.17	0.03							0.37
Rib. Lap	0.12	0.17	0.03							0.32
Comber	1.67	0.84	0.47							2.98
Drawing	0.51	0.27	0.02							0.80
Simplex	1.46	1.22	0.36							3.03
Spinning	50.68	9.72	3.08	1.07		5.20	8.56	29.94	25.67	133.92
Cone	6.19	2.32	0.46							8.97
Job work	0.00	0.00	0.00							0.00
Packing	0.00	0.11	4.00							4.11
Sale Exp.	0.00	0.00	0.00		4.05					4.05
TOTAL	64.44	20.30	9.18	1.07	4.05	5.20	8.56	29.94	25.67	168.40
	Raw Material Clean Cotton Rs/Kg									213.12
	Total Manufacturing cost - Rs/kg									381.52
	Yarn selling Price - Rs/Kg									405.00
	Net Profit - Rs/Kg									23.48
	Target Profit/Kg Rs									22.80

Table 13 gives the details of Activity Based costing of the Product after Iteration 2. Target Costing was achieved after Iteration 2. After Re-engineering using Activity Based Cost information, the profitability of the product can be improved by Rs 5.68 per kg of yarn ie from Rs 17.80 to Rs 23.48.

Findings

Activity Based Cost information is more helpful in identifying the loss making products. Hence we can introduce a better product by replacing the loss making product will ultimately improve the profitability of the “Textile Spinning Mills”.

Target Costing can be used as an effective tool to design a new product as well as redesign an existing product (Kaizen Costing) by using the Activity Based Costing information.

Conclusion

1.Activity Based Costing can be used for better cost prediction.

As per Table 8, Since the calculated value (0.23), is less than the table value (5.991), the difference between the budgeted and Actual is “statistically in significant” . Hence Forecasting the product value using Activity Based costing method is very precise and may help the managers in taking the right product decisions.

2.ABC costing Can be used to identify loss making products.

With reference to Table 2 , which describes the information of Activity based costing of 8 products , we can understand that the best profit making product is 120s cbd . Profit making products are 120s cbd , 2/100cbd TFO , 105s cbd ,100s cbd . Loss making products are 50s cbd HT and 80s cbd CP. Activity Based Costing information clearly indicates Loss making products and the Profit order of products .

3.ABC can be used for cost cutting / Lean manufacturing.

After careful analysis of Activity Based Costing of 100s cbd cone product's ,Pareto / Cause Effect Analysis, 3 activities are considered to be the major causes for the cost, which were shown in the table 9. Some efforts were made to reduce the cost without scarifying on the demanded quality of the product , otherwise called elimination of hidden loses ie Lean Manufacturing by modifying the cost drivers of the 3 activities put together in the Cost-If column.

4.ABC costing can be used for budgeting and performance measurement.

Table 3 to Table 8 , describes how the Activity Based Costing information useful in budgetary control of a Spinning mill.

5.ABC costing together with Target costing can be used to design new products competitively.

Table 9 to Table 13 describes the use of Activity based costing information in re-designing a product to meet the Target Costing . The same way we can design new products for spinning mills.

6.ABC costing can be used as a Decision Support System (DSS).

Activity Based Costing information will give micro information about the costing like “ Fish-Bone Diagram” . Such a “Cause-Effect Analysis” information will be more useful in identifying the “Non-Value Added Activities “. Hence Managers can taken decision to eliminate such activities to reduce the cost and improving the Profit of existing products .

7.Oppurtunity for Spinning Mills to improve Profit margin.

If Activity Based Costing is implemented in Spinning Mills , since the cost prediction is more accurate , loss making products will be identified. They can be replaced with a better profit making products with the existing resources. New Products can be designed using Target costing techniques to meet the desired profit for a spinning mill. Existing product of a spinning mill can also be redesigned to improve the profit from the existing level to the Target level by using ABC costing information (Activity Based Costing Management) and Target Costing Technique. Such a continual improvement in cost reduction for the existing product is called "KAIZEN Costing" will be very much needed for the spinning mills since input costs are changing very frequently. Hence without any further investment, with the same resources , a spinning mill can improve its overall profit margin by Activity Based costing information.

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