STRATEGIC DECISION MAKING FOR A FOOTWEAR INDUSTRY USING ACTIVITY BASED COSTING AND VALUE CHAIN MODELS

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ABSTRACT. Majority of the enterprises in modern day world are facing speedy transformation in their business dynamics. Organizational challenges have been deepened by the deregulation, in tandem with the escalating worldwide competition and diminution in product life cycles resulting from scientific modernization. Hence, with a view to be competitive under these vibrant conditions, it is important to comprehend how a business functions, how costs are incurred and how they can be efficiently managed. Activity based costing (ABC) model is a new cost accounting approach developed to overcome limitations of the traditional volume-based cost accounting methods and enhance its usefulness in strategic decision making. This paper presents the development and application of an ABC model to cost the entire range of products of an Indian footwear manufacturing industry in order to enhance its competitiveness. Although, there is sufficient published research papers associated with implementation of ABC model in manufacturing sector, none of them has adopted ABC technique in the context of footwear manufacturing. Furthermore, a combined approach employing ABC and value chain models is proposed for the first time for the said footwear industry to demonstrate how it can be implemented in a complementary way to formulate a superior strategy. KEY WORDS: activity based costing; value chain analysis; footwear industry; activity; strategy

LUAREA UNOR DECIZII STRATEGICE PENTRU INDUSTRIA DE ÎNCĂLȚĂMINTE UTILIZÂND METODA STABILIRII COSTULUI PE BAZA ACTIVITĂȚII ȘI MODELELE LANȚURILOR VALORICE

REZUMAT. Majoritatea întreprinderilor din lumea modernă se confruntă cu o transformare rapidă a dinamicii afacerilor. Provocările organizaționale au fost intensificate de dereglementare, în paralel cu creșterea concurenței la nivel mondial și diminuarea ciclului de viață al produselor rezultate în urma modernizării științifice. Prin urmare, pentru a fi competitiv în aceste condiții dinamice, este important să se înțeleagă cum funcționează o afacere, cum sunt suportate costurile și cum pot fi gestionate eficient. Modelul de stabilire a costurilor pe baza activității (ABC) reprezintă o nouă abordare a contabilizării costurilor, dezvoltată pentru a depăși limitele metodelor tradiționale de contabilizare a costurilor pe baza volumului și pentru a spori utilitatea acesteia în procesul decizional strategic. Această lucrare prezintă dezvoltarea și aplicarea unui model ABC pentru a contabiliza costurile unei întregi game de produse din industria de fabricare a încălțămintei din India, pentru a spori competitivitatea acesteia. Deși există suficiente studii de cercetare publicate în legătură cu implementarea modelului ABC în sectorul de producție, niciunul dintre acestea nu a adoptat tehnica ABC în contextul producției de încălțăminte. În plus, se propune pentru prima dată o abordare combinată care utilizează modelele ABC și lanțul valoric pentru industria încălțămintei, pentru a demonstra modul în care acestea pot fi implementate într-un mod complementar pentru a formula o strategie superioară.

CUVINTE CHEIE: stabilirea costurilor pe baza activității; analiza lanțului valoric; industria încălțămintei; activitate; strategie

DÉCISION STRATÉGIQUE POUR L'INDUSTRIE DE LA CHAUSSURE À L'AIDE DU CALCUL DES COÛTS PAR ACTIVITÉ ET DU CHAÎNE DE VALEUR

RÉSUMÉ. La majorité des entreprises du monde moderne sont confrontées à une transformation rapide de leur dynamique commerciale. Les défis organisationnels ont été approfondis par la déréglementation, parallèlement à l'escalade de la concurrence mondiale et à la diminution des cycles de vie des produits résultant de la modernisation scientifique. Par conséquent, en vue d'être compétitif dans ces conditions dynamiques, il est important de comprendre comment fonctionne une entreprise, comment les coûts sont engagés et comment ils peuvent être gérés efficacement. Le modèle de calcul des coûts à base d'activité (ABC) est une nouvelle méthode de comptabilité développée pour surmonter les limites des méthodes comptables traditionnelles basées sur le volume et pour améliorer son utilité dans la prise de décision stratégique. Cet article présente le développement et l'application d'un modèle ABC pour calculer les coûts de toute la gamme des produits de l'industrie indienne de la chaussure afin de renforcer sa compétitivité. Bien qu'il existe suffisamment de documents de recherche publiés associés à la mise en œuvre du modèle ABC dans le secteur manufacturier, aucun d'entre eux n'a adopté la technique ABC dans le contexte de la fabrication de chaussures. De plus, une approche combinée utilisant les modèles ABC et les chaînes de valeur est proposée pour la première fois pour l'industrie de la chaussure, afin de montrer comment on peut les mettre en œuvre de manière complémentaire pour formuler une stratégie supérieure.

MOTS CLÉS : calcul des coûts par activité ; analyse de la chaîne de valeur ; industrie de la chaussure ; activité ; stratégie

INTRODUCTION

The leather and footwear sector has a prominent role to play in overall progress of the Indian economy owing to its huge social and economic contribution. It is providing jobs to about 3 million people, generally from the weaker sections of the society, based on a report published in The Hindu in 2017. With knowledge and technology of footwear manufacturing progressing year after year, the Indian footwear industry is inscribing its dominance and capability in the international markets. According to information derived from the website of India Brand Equity Foundation in 2016, India is the second largest global producer of footwear and leather garments, accounting

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for 12.9% of global production of hides/skins. It is observed that a number of new trends have emerged in the recent past in the Indian footwear industry which indicate the future growth of this sector. For example, numerous organizations in the market are providing an assortment of stylish eco-friendly footwear to ensure that the customers do not forfeit on comfort or style, while choosing green shoes. In the same way, progressively more people are now opting for customized or exclusive footwear, which is creating more prospects for footwear designers. Moreover, younger generation, being more style conscious, prefers ethnic footwear to give a touch of Indian glamour to their western attire. Numerous customers in India now spend as much on footwear as on clothing and change their shoes/slippers/sandals for assorted events, which in turn, helps to expand footwear range from formals, casuals and homewear to weddings, monsoons, clubwear, sportswear, adventure, beachwear and lounge wear. According to the India Retail Report published in 2016, these trends have assisted the footwear industry to grow at almost 18%, and it is expected that India's total retail footwear market would cross Rs. 540 billion by 2017 from its current worth of Rs. 335.92 billion. Besides, growing disposable incomes, profusion of raw materials, advent of new-fangled and superior designs to customers, burgeoning retail opportunities and vibrant export market have also been the growth drivers of the footwear sector in India. In addition, the footwear sector is not expected to face impact of any slowdown in the Indian economy because of a number of external stimulators that include more women joining the workforce, an increasing desire to look good and rise in customers' aspiration levels.

Indian footwear industry has a few national multinational and enterprises present in the organized segment, and a hefty unorganized section characterized by slipper/ sandal manufactures is dominated by small regional organizations. At present, there is a ruthless competition among various footwear manufacturing organizations operating in the Indian market. Growing competition is forcing the organizations to invigorate their footwear product collection at a faster rate than before. Footwear manufacturers are also witnessing a

rise in the retailing of shoes/slippers/sandals with the upsurge of e-commerce and the emergent trend of online shopping. Till date, majority of the Indian footwear manufacturers are engaged in practicing traditional cost accounting systems, which often fail to provide precise and accurate cost information as required in streamlining the strategic decisions in order to augment quality of decisions. This limitation of traditional cost accounting systems arises owing to their dependence on arbitrary rather than cause and effect allocation of overhead costs. Production volume-related measures are utilized in the traditional cost accounting systems to allocate overhead costs to products, although several products do not require indirect resources, i.e. overhead costs proportionately to the quantity of products manufactured. Thus, the traditional costing systems distort product cost as many types of overhead costs are driven through non-production volume-related cost drivers, such as size, dimension and complexity. The activity based costing (ABC) model is designed as a modern cost accounting tool to trounce the limitations of traditional costing systems. It is developed to gratify the demands of modern day enterprises which are characterized by a wide range and complexity of products and services, high overhead costs in comparison to direct labor cost and a surplus of cost data. Contrasting to the traditional cost accounting systems, ABC model acknowledges the fact that not all activities (and thus resource consumption rates) are proportional to the number of units produced [1]. On the other hand, value chain analysis (VCA) is a technique employed to evaluate internal company activities. Its objective is to identify activities that are basically significant to organizational success, and are the foundation of cost or differentiation advantage. Moreover, VCA method also intends to recognize those activities of an enterprise which can be improved to provide a competitive edge. Therefore, in this paper, an ABC model is developed for a footwear manufacturing industry in the state of West Bengal in India to cost its various products. The derived results from the application of ABC model in the said enterprise will help its managers in improving the organizational performance, productivity and profitability. The comprehensive application

procedure of the developed ABC model is also discussed. An integrated ABC-VCA model is then proposed for the said enterprise to comprehend the reasons for ineffectiveness in the chain and recognize potential leverage points for enhancing the performance of the chain.

REVIEW OF THE LITERATURE

Ridderstolpe et al. [2] presented the application of a model for process analysis and ABC method at a Heart Center in Sweden as a technique for administrative cost information, strategic decision making, quality improvement and cost reduction. Dickinson and Lere [3] demonstrated the ways how ABC technique could help in managing the marketing functions of an organization. Hughes [4] exhibited the potential of ABC model in improving the competitive performance of SMEs, mainly in the UK clothing and textile industry. Banker et al. [5] examined the impact of ABC model on adoption of world class manufacturing practices and plant performance. Stelling et al. [6] employed an ABC model to present a methodology for estimating the cost of a process, crucial to its evaluation. Carli and Canavari [7] proposed a model for a new information system for agribusiness management that would support direct costing and ABC methods. Mashayekhi et al. [8] evaluated the viability of implementing activity based budgeting in Sharif University of Technology. Dwivedi and Chakraborty [9] implemented ABC model in a pulse mill of India to cost its entire range of products. Maiga [10] assessed the association between ABC model adoption and four manufacturing plant performance measures (cycle time improvement, quality improvement, cost improvement and profitability), and investigated selection bias and endogenous nature of their relationship. Dwivedi and Chakraborty [11] applied an ABC model in an engineering department of an autonomous university in India. Shama et al. [12] presented an approach to integrate life cycle assessment and activity based life cycle costing methodology with a view to recognize the improvement opportunities for sustainable products. Tsai et al. [13] proposed a programming decision model based on ABC management system for the electrical and electronic industry that aimed at sustainable development and encompassed various advantages generated through the

appraisal process. Dwivedi and Chakraborty [14] implemented an ABC model in a raw material handling department of an Indian steel plant to demonstrate its efficiency in providing accurate and precise cost information in a more management friendly manner.

Taylor [15] developed an innovative methodology to apply lean value chain improvement technique to a complete supply chain for a food product. Souza and D'Agosto [16] utilized a VCA method to verify whether it could be possible to distribute financial benefits along the scrap tire reverse logistics chain considering co-processing in the cement industries as the destination. Olson [17] applied the concept of green innovation value chain framework to analyze the photovoltaic solar power chain. Thomas [18] discussed about the recent tourism value chains to show that the impact of tourism would greatly depend upon the chosen poverty threshold. Tomić and Andrijašević [19] assessed the possibilities of integrated use of target costing, ABC and Kaizen methodologies in the internal value chain as the central link of the entire chain. Yan and Wang [20] quantitatively analyzed the value flow of iron resources in China while employing the material flow and VCA methods. Wang [21] provided a comprehensive outline of the value chain of bio-coal business in Finland, defined the proper business models of bio-coal business and investigated the interrelationships between value chain activities. Hamilton-Hart and Stringer [22] presented a framework for fishery sector analysis based on the works conducted on global value chains and global production networks.

It follows from the foregoing literature review that ABC model has been successfully applied in manufacturing as well as service sectors because of its ability to evaluate cost of a product or service at an assortment of activity levels in order to provide more precise cost information. But, there is no published research paper associated with implementation of ABC model in any footwear industry. Hence, for the first time, this paper explores the applicability and potentiality of an ABC model in footwear sector for providing the decision makers with pragmatic and strategic outlook of the cost related to various activities of the enterprise that are critical in efficient planning, controlling and decision making. Additionally, an integrated ABC-VCA model is developed to exploit the complementary synergies of both ABC and VCA models.

ABC MODEL

Existing business environment has shown that the information derived through application of the traditional costing systems is not sufficient for business management. Traditional costing systems are not only incapable to provide the essential structure for measuring cost precisely, but they are also incompetent to empower managers with sufficient information required for organizing the enterprise's everyday activities successfully and proficiently. The key objection to traditional costing systems is the allotment of overhead costs based on volume-based drivers. The ABC model is a contemporary management accounting tool which helps managers of the organizations to evaluate internal process of the enterprise, estimate accurate product and customer profitability, institute superior performance measures, appraise novel investment opportunities, set better budget allotment, initiate cost minimization procedure and establish an efficient resource requirement plan. Principally, ABC is a two stage method for assigning overhead costs to product units based on cost drivers at different levels of activity. In the first step, resource costs are allocated to cost pools that correspond to various categories of activities performed by the organization. Cost allocated to different activity pools are subsequently assigned to the products that benefit from or create the demand for the activities.

ABC Model Development and Implementation in a Footwear Industry

The accounting system of a slipper

manufacturing industry is considered here for development and subsequent implementation of ABC model. The identity of this enterprise is not disclosed here for confidentiality and anonymity reason and hereafter, it is referred to as BNL Limited. It is a private limited company, situated in the state of West Bengal in India and produces 17 different types of slipper to meet varied demands of the customers. It is observed that BNL Limited sells those 17 slipper variants, named hereafter as AB, AE, AF, AT, BO, CA, CO, CL, DY, KE, LD, NC, PH, SY, TO, TS and YS in the local market apart from supplying them to some neighboring states, such as Odisha, Assam, Bihar, Uttar Pradesh and Jharkhand. The BNL Limited has 225 full time employees, which comprise laborers, supervisors, technical persons and administrative staffs. All the pertinent data necessary for implementation of ABC model in the said organization are accumulated for the month of May of the financial year 2015-2016. Each and every activity required to manufacture those 17 footwear variants in BNL Limited are critically analyzed and grouped into 17 homogeneous activity cost pools. It is observed that batching (sole), mixing of raw materials, sheeting (sole), sole pressing, sole cutting, drilling, cleaning, batching (strap), kneeding, accelerator mixing, sheeting (strap), strap pressing, strap cutting, strap fitting, inspection and quality control, and administration are the 16 activity pools required for production of all categories of slipper. Additionally, printing is observed as an activity pool that is required besides the abovementioned activities for production of AF, AT, BO, CL, DY, SY, TS and YS kinds of slipper. The detailed production process of different categories of slipper in BNL Limited is exhibited in Figure 1.



Figure 1. Detailed production process in BNL Limited

Activity pools of batching (sole) and batching (strap) include the total expenditure incurred in different activities related to arrangement of all the relevant raw materials required for producing soles and straps of a particular slipper at the shop floor respectively. It is observed that the batched raw materials for sole manufacture are mixed utilizing different equipments, viz. intermix and rollers to prepare a lump. On the other hand, kneeder and rollers are employed to mix the batched raw materials of strap manufacturing into 'falli'. Therefore, the total cost related to running of intermix and rollers is allocated to activity pool of mixing of raw material, whereas, activity pool of kneeding comprises the total expense incurred on operation of kneeder and rollers. Furthermore, accelerator is added to 'falli' to enhance its softness, so the total cost associated with accelerator addition process is accumulated into the activity pool of accelerator mixing. Moreover, the total costs related to each and every activity needed for producing smooth sole and strap plies with a desired thickness are put into the activity pools of sheeting (sole) and sheeting (strap) respectively. Sole pressing or strap pressing machines are employed to press different sole or strap plies together into a single sole or strap according to design requirements and therefore, the total expense incurred on all activities connected to operation of sole pressing or strap pressing machines is attached to activity pool of sole pressing or strap pressing. Similarly, the total costs associated with those activities as directly related to cutting of soles and straps are congregated in the sole cutting and strap cutting cost pools respectively. Further, the total payout given to third party as well as the related salary expenditure incurred for making holes on soles of various slipper products is put into activity pool of drilling. It is noticed that screen printers are often utilized to print different designs on soles of various products, so the total expense incurred in all the activities linked to those screen printers is placed into the activity pool of printing. The activity pool of cleaning contains the total cost related to those activities required during removal of any dust and edge from the finally produced slippers. Overheads associated with the inspection process in quality assurance of the slipper products are separated into the inspection and quality control cost pool.

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The activity pool of strap fitting consists of total expenditure incurred on all those activities as carried out in fitting straps into the holes of slipper soles. Administration cost pool includes the compensation and related benefits of those employees who accomplish the administrative/ clerical activities of BNL Limited and other non-salary administrative expenses incurred to support production of the footwear items. Now, it is estimated that the total costs related to 17 activity cost pools of batching (sole), mixing of raw material, sheeting (sole), sole pressing, sole cutting, drilling, printing, strap fitting, cleaning, inspection and quality control, batching (strap), kneeding, accelerator mixing, sheeting (strap), strap pressing, strap cutting and administration are Rs. 41441.29, Rs. 536114.33, Rs. 516526.79, Rs. 1232830.51, Rs. 352664.13, Rs. 179828.60, Rs. 328456.13, Rs. 1115296.16, Rs. 93549.33, Rs. 107363.09, Rs. 27627.53, Rs. 179379.24, Rs. 248121.08, Rs. 263984.94, Rs. 424577.98, Rs. 420981.60 and Rs. 377722.91 respectively. A range of cost drivers depicting the cause and effect relationships is chosen to allocate costs related to 17 activity cost pools to 17 identified cost objects, i.e. AB, AE, AF, AT, BO, CA, CO, CL, DY, KE, LD, NC, PH, SY, TO, TS and YS. Based on the proportionate number of related machine hours required at unit level of production, the total costs allocated to mixing of raw material, sheeting (sole), sole pressing, kneeding, accelerator mixing, sheeting (strap) and strap pressing are apportioned among the cost objects. The total costs associated with activity pools of batching (sole), sole cutting, drilling, strap fitting, cleaning, inspection and quality control, batching (strap), strap cutting and administration are allocated to different cost objects, i.e. AB, AE, AF, AT, BO, CA, CO, CL, DY, KE, LD, NC, PH, SY, TO, TS and YS according to the proportionate utilization of those nine activities during production of each type of slipper in BNL Limited. Besides, printing is the process that is only utilized for producing AF, AT, BO, CL, DY, SY, TS and YS categories of slipper. Thus, the total cost assigned to activity pool of printing is proportionately allotted to cost objects of AF, AT, BO, CL, DY, SY, TS and YS based on the total printing time required for production of those eight categories of slipper. So, it is calculated that the costs allocated to AB, AE, AF, AT, BO, CA, CO, CL, DY, KE, LD, NC, SY, TO,

PH, TS and YS in BNL Limited are Rs. 865793.84, Rs. 113436.12, Rs. 167694.75, Rs. 111528.73, Rs. 54253.86, Rs. 495528.39, Rs. 61244.90, Rs. 344911.91, Rs. 901840.18, Rs. 117399.48, Rs. 122360.19, Rs. 151783.91, Rs. 54762.77, Rs. 261136.39, Rs. 1010153.30, Rs. 1454459.67 and Rs. 158177.25 respectively. These are the overhead costs associated with the total volume of monthly production of each type of slipper. So, the overhead cost per pair for individual category of slipper is estimated after dividing this total overhead cost by the total pairs of each type of slipper produced during the concerned month. The total cost per pair for each type of slipper is then estimated by summing up the corresponding overhead cost, raw material cost and packaging material cost. Table 1 shows the detailed calculation of total cost per pair for each type of slipper in BNL Limited, as calculated using ABC model.

Variant	Total overhead cost/ pair (Rs.)	Raw material cost/ pair (Rs.)	Packaging material cost/ pair (Rs.)	Total cost/pair (Rs.)
AB	7.21	46.55	9.45	63.21
AE	16.44	42.58	7.85	66.87
AF	8.15	64.25	19.45	91.85
AT	10.76	34.64	5.02	50.42
BO	16.44	71.25	21.56	109.25
CA	6.45	48.29	11.56	66.30
CO	20.83	47.58	13.65	82.06
CL	6.45	68.05	24.45	98.95
DY	8.09	43.75	14.5	66.34
KE	15.17	38.54	9.57	63.28
LD	7.87	48.85	16.85	73.57
NC	10.50	46.52	16.56	73.58
SY	6.71	67.65	25.85	100.21
то	4.79	48.95	18.43	72.17
PH	6.86	46.78	14.85	68.49
TS	7.89	43.95	11.69	63.53
YS	11.12	69.45	25.54	106.11

Table 1: Total cost/pair in BNL Limited estimated using ABC model

Comparison of ABC Model with Traditional Costing System

The BNL Limited is currently utilizing the traditional costing system for management accounting and financial reporting. The number of slipper pairs produced is employed as a single cost driver to allocate the total overhead cost in the traditional costing system, instead of multiple cost drivers as applied in ABC model. Apart from that, the direct costs related to raw material and packaging material are calculated similarly as in ABC model. Table 2 shows the detailed calculation of cost/pair for each type of slipper in BNL Limited, as estimated using the traditional costing system. Table 3 compares the total cost per pair of slipper and profitability per pair of slipper for BNL Limited as estimated employing both the costing models.

It can be concluded from Table 3 that the traditional costing system distorts the cost of five types of slipper, i.e. AE, AT, BO, CO and KE considerably. For all these categories of slipper,

cost/pair is overestimated by the traditional costing system. It is also observed that both the costing models do not estimate the same total cost for any of the slipper variants. These variations in total cost estimation and subsequently profitability assessment are attributed to the way how overhead costs are allocated in ABC model and traditional costing system respectively. The results elicited from the adopted ABC model provides management of the said organization with more accurate and precise cost information, which assists the administration to formulate a realistic budget, identify the inefficiencies, set the unit price of each product produced, devise better product mix and improve the organization's competitiveness. Therefore, the management of this footwear manufacturing industry should start taking various strategic decisions on the basis of the cost information derived from ABC model in order to avoid commercial and operational failure.

Variant Raw material cost/ pair (Rs.)		Packaging material cost/ pair (Rs.)	Total overhead cost/ pair (Rs.)	Total cost/pair (Rs.)
AB	46.55	9.45	7.51	63.51
AE	42.58	7.85	9.34	59.77
AF	64.25	19.45	6.26	89.96
AT	34.64	5.02	6.22	45.88
BO	71.25	21.56	9.77	102.58
CA	48.29	11.56	7.55	67.40
CO	47.58	13.65	10.96	72.19
CL	68.05	24.45	7.24	99.74
DY	43.75	14.5	7.52	65.77
KE	38.54	9.57	8.33	56.44
LD	48.85	16.85	8.30	74.00
NC	46.52	16.56	8.92	72.00
SY	67.65	25.85	7.90	101.40
ТО	48.95	18.43	7.10	74.48
PH	46.78	14.85	7.44	69.07
TS	43.95	11.69	7.70	63.34
YS	69.45	25.54	9.07	104.06

The Pareto analysis on the performance of slipper variants based on total profitability contribution as estimated using ABC model is shown in Figure 2. It is noticed that TS, PH, DY, CL, AB and CA are the slipper groups which add most with respect to total profitability contribution. Hence, special care needs to be provided for strategy formulation of those six products as they are vital for long term success of the said organization.



Figure 2. Pareto analysis on total profitability contribution

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		ABC model		Traditional costing system	
Variant	Price/pair (Rs.)	Total cost/pair (Rs.)	Profit/pair (Rs.)	Total cost/pair (Rs.)	Profit/pair (Rs.)
AB	89	63.21	25.79	63.51	25.49
AE	99	66.87	32.13	59.77	39.23
AF	135	91.85	43.15	89.96	45.04
AT	79	50.42	28.58	45.88	33.12
BO	159	109.25	49.75	102.58	56.42
CA	93	66.30	26.70	67.40	25.60
CO	111	82.06	28.94	72.19	38.81
CL	169	98.95	70.05	99.74	69.26
DY	100	66.34	33.66	65.77	34.23
KE	93	63.28	29.72	56.44	36.56
LD	101	73.57	27.43	74.00	27.00
NC	100	73.58	26.42	72.00	28.00
SY	149	100.21	48.79	101.40	47.60
TO	109	72.17	36.83	74.48	34.52
PH	97	68.49	28.51	69.07	27.93
TS	95	63.53	31.47	63.34	31.66
YS	156	106.11	49.89	104.06	51.94

DERIVING COMPETITIVE EDGE THROUGH INTEGRATED ABC-VCA MODEL

It is well acknowledged that ABC model provides precise information while evaluating an organization's processes and work flows to identify actual activities that cause costs. The accurate information thus presented through ABC model creates value for managers by facilitating insight into potential sources of cost leadership. On the other hand, VCA is a technique that analyzes activities of the organization to reveal where its competitive advantages or disadvantages exist. But, it is observed that in contemporary business environment. information collected while employing traditional cost accounting systems is not sufficient and accurate for applying VCA model for optimal decision making. ABC model has emerged as a modern day cost accounting tool that enables the management of the organization to monitor costs more effortlessly and precisely because of its ability to perceive the behaviour of the costs from the strategic perspective, which allows seamless implementation of VCA technique to achieve a competitive position. The information derived from ABC model assists administrators to manage and control one of two probable sources of competitive edge in value chain of enterprise, i.e. low cost production and low cost distribution.

Therefore, a combined ABC-VCA model is designed for application in BNL Limited. The managers benefit from business acumen provided through implementation of this integrated ABC-VCA model, which is valuable in comprehending the linkages and structure of the value chain and offering the foundation for recognizing several of the key constraints and policy issues that necessitate additional elucidation. The plan is to incite the policy makers to consider about the costs, position they attain in the structure of product value and their control on outlining the sales price since it is exceedingly imperative to manufacture exact products for the customers, of requisite superiority and functionality along with as minimum production costs as feasible. Porter [23] pointed out that each and every internal activity of an enterprise representing its value chain could be classified into primary activity that would attach value to the final product unswervingly and support activities that would add value indirectly. Here,

a team consisting of managers and subject experts is formed to develop an exclusive VCA model for BNL Limited taking into account its activities, constraints and logistics, Batching (sole), mixing of raw material, sheeting (sole), sole pressing, sole cutting, drilling, printing, strap fitting, cleaning, inspection and quality control, batching (strap), kneeding, accelerator mixing, sheeting (strap), strap pressing and strap cutting are identified as the primary activities in the said organization that are directly concerned with manufacture and delivery of products. The secondary activities of BNL Limited consist of procurement, research and development, human resource management, and finance and accounting. These secondary activities are not straightforwardly associated with manufacturing of slippers in BNL Limited, but may increase effectiveness or efficiency of the production process. The integrated ABC-BSC model for the said department is shown in Figure 3.

It can be observed from the designed model that ABC provides accurate information on individual costs of all the primary activities of value chain of BNL Limited so that the managers can either curtail some activities not creating value or remodel the operational processes aimed at minimizing total product cost. Moreover, detailed analysis of secondary activities of the said organization's value chain enabled through application of ABC model enhances the transparency of costs in order to efficiently manage the activities. It can be noticed from the application of this integrated ABC-VCA model that the expenses incurred on strap fitting, sheeting (sole), mixing of raw material and sole pressing activities contribute towards more than 50% of the total overhead cost of the said footwear industry. Those four activities of value chain are decisive for competitive advantage of BNL Limited and thus, utmost care should be devoted for their planning, controlling and decision making. Thus, it can be comprehended that the developed integrated ABC-VCA model appropriately and accurately delineate activities of value chain into the ones that add value and the ones that do not attach worth to the product. This helps the management to have an insight into activities which creates the supreme value for customers or areas whose performance must be improved.

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Figure 3. Integrated ABC-VCA model for BNL Limited

CONCLUSIONS

Contemporary organizations are constantly attempting to acclimatize, endure, perform and control. But, they are not all the time thriving to do the same. The business environment of modern day market is going through rapid and hastening change, resulting in escalating ambiguity and convolution. Enterprises always struggle in this hyper-competitive environment to achieve a sustained competitive position. In order to achieve it, they either position themselves strategically in their sector, or develop dependable and idiosyncratic organizational capabilities and resources through knowledge, learning and innovation. The ABC model is a new management technique that helps managers to position their organizations expediently against their competitors through formulating new innovative strategies related to products, resources and market in order to satisfy varying demands of the customers. So, this paper proposes the application of ABC model in a footwear industry to derive strategically relevant

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information about product profitability through accurately linking the consumption of resources to designated outputs. The result derived from implemented ABC model in the said enterprise can help its management to understand in a better and more accurate way about the most profitable product line, optimal product mix, and best strategy to be effectively formulated and monitored. Additionally, a framework to integrate both ABC and VCA models is provided for BNL Limited with a view to analyze the activities that take place in its value chain and relates them to a study of the competitive strength of the organization. The integrated ABC-VCA model can help the policy makers in a more efficient and effective management of the value chain activities so as to deliver products to the customers in time devoid of compromising the requisite performances. Although these models are developed for an explicit industry, there is also enough future scope of their application to other industries.

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