Cost management in Indian Industry:
Banking , Healthcare and Construction Industry

Contributors: Sanjukta Sen, Manushi Sharma, Nidhi Gupta, Nikita Sarawagi, Richa Sharma, Shreyasi Bannerjee (PGDM Program Students-Birla Institute of Management Technology, Noida)

Project Guide: CMA Pankaj Jain, President-Indian Society of Management Accountants www.cmaonline.in
Project Co-ordinator: Dr L. Ramani, Associate Professor-BIMTECH www.bimtech.ac.in

Table of Contents

INTRODUCTION

In today's time of rapid technological change, tough global and domestic competition, total cost management is central to sustained corporate profitability and competitiveness. The management mantra today is conquering your costs, before they conquer you. The cost means total cost to the customer. The cost leadership strategy does not mean compromise on either quality or technology or product differentiation. Low costs are no advantage, if the customers are not willing to buy the product of low cost firm. Cost management has to be driven with customer as the focus.

The survival triplet today for any company is how to manage its product/service cost, quality, and performance. The customers are continuously demanding high quality and better performance products/services and at the same time, they want the prices to fall. The shareholders are also demanding a required rate of return on their investment with the company. Thus, cost has become a residual. The challenge is being able to manufacture or provide service within the stipulated cost framework. Thus, cost management has to be an ongoing continuous improvement programme.

Today the market leaders are even pursuing cost-reduction as a strategic imperative. They want to stay ahead of the market by continuously widening the gap between their cost and that of their competitors and re-deploy the resources for profitable growth.

Thus, the cost challenge is one of the most critical tasks facing Indian Industry during the next decade in the post-WTO environment. The framework will be of activity-based costing (ABC) and performance management in a value chain perspective.

Firms using activity-based costing system are:

a) More likely to have a:

i) Better insight for benchmarking and budgeting;

ii) Clear structure of priorities of budget goal;

iii) Clarity of reasons for effective implementation of planning; and budgeting Process in their organization;

iv) Successful in capturing accurate cost information for value chain analysis and supply chain analysis and

b) Less likely to use

i) department-wide budgeting systems,

ii) Absorption costing systems, and

iii) Variable costing systems vis-à-vis the firms that follow traditional costing system.

Usage of cost management tools in India

Cost-volume-profit analysis

Material Requirement Planning (MRP)

Activity-based budgeting

Business Process Reengineering (BPR)

Value engineering

Just in Time

Target costing

Strategic positioning analysis

Kaizen budgeting

Kaizen costing

Life cycle budgeting

Quality costing

Taguchi Costing

(Source: Cost management practices in India-An empirical study)

Current use of management tools

Transfer pricing practices

The Indian corporate sector had followed market price based transfer pricing system as against the worldwide practice of cost-based method domestic transfer pricing and market price based method for international transfer. The motivations for adoption of market based domestic transfer pricing method have been attributed to optimal decision making for the organization, divisional autonomy, and motivation for performance.

Manufacturing overheads accounting

The use of direct method of allocation of service departments' overheads cost amongst the production departments is widespread. In India, too the direct method was found to be widely used to allocate support department overheads cost amongst the production department in the first stage of cost allocation. Surprisingly the reciprocal method, the theoretically more sound method of cost allocation, does not find much acceptance with corporate India and was not at all popular worldwide.

The department-wide machine hour rate had been found to be more popular with corporate India vis-à-vis department wide comprehensive machine hour rate. The practice of corporate India with respect to treatment of under/over-absorbed overheads was in agreement with the generally accepted cost accounting principles.

Standard costing

The standard costing technique as a part of the management control systems had been widely used amongst corporate India. The Indian practice is in agreement with that of the U.S.A. No significant difference in the use of standard costing amongst ABC users and non-ABC users were found.

As per studies, the sales volume variance and selling price variance had been given the highest level of importance over the other variances. This had been followed in material price and material usage variance.

On an aggregate basis, material variances had been given more predominance over overhead variances but when the sample was discriminated in to ABC user/nonuser; it had been found that ABC users were more concerned about overhead variances than the non-users.

Cost management and budgetary planning & control had evolved to be the major motivations for implementation of standard costing in the organizations. The ABC users had indicated performance measurement as significantly higher motivation for implementation of standard costing vis-à-vis non-ABC users.

COST MANAGEMENT AND PROFITABILITY IN BANKS

Banking situation overview:

The concept of banking business over the decades has changed quite a lot. It's no longer merely their traditional twin streams of activities of accepting deposits and lending to the needy. With the wafer thin contribution from the staple diet of interest income, banks are forced to look for earning other income through commissions, brokerages, profits from investments etc to remain profitable. Also the growing competition and complexity of the changing banking situations are compelling Banks for innovating complex products, adapting new channels for such innovative product deliveries and following new business processes investing huge capital resources.

NEED FOR COST MANAGEMENT & PROFITABILITY IN BANKS:

Banks earn profit when its business costs and expenses are less than its revenues through its services and investments. Any business for that matter survives only if it earns profits. Although Banking is considered as a bloodline of economy of a nation, to provide a reasonable return for the above-cited huge capital expenditures and to remain servicing any economy, profitability of the banks is a must. To remain profitable, 'efficient & effective cost management' of its entire operations is the need of the day for the banking sector. Besides this basic need of earning profit for survival, contrary to other business activities, the banks are uniquely positioned to face many constraints to earn even normal profits for its services. The following are some of the bottlenecks the banks have to circumvent to earn profits:

1) most of the Banks are predominantly regulated by respective Governments to serve their national objectives like food production, rural development, health, education etc. Banks lend their borrowed funds to other borrowers with needs spread across different time periods. Since banks rely on borrowed money, they need to raise resources in a matching manner to avoid the risk of asset-liability mismatch. At the systemic level often banks face small gaps in their matching maturity profiles of their resources due to frequent change in regulatory provisions.

2) Banking business involves greater risk than many other businesses owing to its nature of commodity of transactions-money.

3) The increased range and complexity of bank operations calls for sophisticated risk management systems and techniques, planning tools and processes that demands additional capital.

4) Business expansion and implementation of Basel-II accord are forcing Banks to shore up capital resources.

5) Burgeoning NPAs in the books of Banks drain the precious resources of the Banks by way of prudential provisioning for bad assets that is the banks chief scourge.

6) Customer driven competitive environment- Customers are less loyal and demand immaculate service delivery.

7) Competition from post offices and non-bank technology companies due to onset of e-commerce with extensive intermediation.

8) Growing interest rates strain the interest spreads.

9) Economies of scale to support new products and services.

Challenges before Bank Management:

1) Banks need to retain their existing customers and widen their base developing a retail strategy and geographical capabilities to focus on the customer satisfaction, improve product sales and delivery qualitatively adhering to regulatory frame work.

2) Banks have to develop an effective strategy and management tools to ensure cost effective straight through processing and seamless end-to-end business processing by leveraging technology for real time performance management capabilities enabling link between actual business performance and business plans.

3)After the recent melt down of the western economies like USA which saw some of the biggest and supposedly "safest" names in international banking like Bear Sterns, Lehman Brothers, Merrill Lynch and HBOS on both sides of Atlantic keel over, the confidence level of investing public in banking is at low ebb. Therefore earning legitimate profits in a transparent and fair manner managing inherent risk factors for ultimate survival is a big challenge.

4) The range of banking products is ever changing with lesser and lesser margins; but cost of infrastructure and operating costs are growing exponentially.

5) Developing new revenue streams and pricing competitively.

Conclusion:

It is easier said than done. It all again depends upon the level of organizational maturity, management skills, resource strength and business plans of each bank to evolve their own cost management and profit making strategies carefully prioritizing each step of their activity.

In the current economic environment, one clear critical success factor for Banks is a strong emphasis on expense management throughout the Banks. Although other critical success factors- such as quality, dependability, relationship building and convenience- are always worthy of attention, an emphasis on controlling expenses trumped all other factors.

The aim of cost accounting in a bank is to provide uniform account allocation within the financial accounting system, which, in turn, affords comprehensive and transparent cost allocation to cost centres, provides detailed costing information and complements existing controlling components within the value area. This is an important principle on the way to creating a comprehensive P&L, profit centre and business unit accounting process.

To achieve these objectives, banks draft the pertinent account allocation guidelines (categorisation, prioritisation and allocation of all business transactions) and develop a cost-type plan based on the financial accounting. As a result, banks facilitate documentation of all cost types within the bank as well as their subsequent allocation to cost centres.

Benefits

- Uniform booking and allocation of costs (account allocation guidelines)
- Definition and consideration of imputed costs
- Cost monitoring (target-actual analysis)
- Transparency in terms of cost reduction potential, increased operational efficiency
- Enhanced information base providing efficient bank controlling.

COST MANAGEMENT IN HEALTHCARE INDUSTRY

The idea of creating a link between activities, costs, and strategic objectives can be applied to any situation in different industries and contexts that requires a strategic perspective of costs.

Now we try to develop strategic cost management practices which could be adopted in the Healthcare/Pharma Industry of India. There are two reasons for selecting this milieu:

First, there appears to be the need for a practical strategic management tool that can connect the medical, business, and public service dimensions of strategic objectives in healthcare. While the achievement of strategic objectives is important in any organization, in the healthcare sector these objectives usually have broader implications beyond the impact on an individual organization. Despite this, the healthcare sector has been especially slow in adopting of the strategic management paradigm. One possible reason for this slower adoption could be the absence of a tool that provides the multi-dimensional focus that the sector needs. Another reason could be the absence of an illustration of how a business system could be useful in the non-profit domain.

Secondly, the healthcare service of patient education plays an important role in the management and control of various diseases. There is widespread acceptance in academic and practitioner literature about the importance of patient education and large amounts of resources are invested in education programs. However patient education (especially in chronic diseases) is absent from discussions in the literature about the costing of healthcare services. The objectives of healthcare education programs, such as creating awareness of the disease and ensuring patients lead productive lives, cannot be subordinated to cost control for its own sake. Therefore, using a strategic cost management model that manages costs, without adversely affecting the goals of patient education, would be appropriate.

The study presents the development of a strategic cost management model in the Pharma Industry that combines activity-based costing with principles of the balanced scorecard (BSC). The purpose of the combined ABC/BSC model is to provide cost information that could be used to evaluate strategy implementation, monitor premises underlying strategy that may need to be revised, and provide a strategic perspective to operational decisions.

While ABC provides activity-specific cost information, the BSC framework of different performance perspectives (or activity dimensions) provides structure to data collection and organization, and facilitates strategic analysis. A model, overlaying the BSC over ABC, would link activities and their costs to the strategic objectives of an education program (for example, prevention of complications and optimization of quality of life). Based on this information about the strategic impact of activities, operational cost management decisions, resource allocation, and process improvements could be implemented so as to maximize congruence with strategic goals. The model could therefore be used to evaluate whether operational realities reflect strategic plans, by showing where resources are being expended. Such a combined model that contributes to the achievement of strategic goals is a valuable strategic cost management tool.

The combined model could also be used to obtain information to reassess strategic objectives. The model could indicate variations in resource consumption thereby directing attention to changes in the strategic environment, or highlight whether assumptions underlying the strategic choice are valid in reality. These issues could manifest themselves in the combined model through variations between expectations and actualities.

The benefits and limitations of using traditional ABC for strategy management

In this section the following points are discussed – (i) the operational advantages of ABC, (ii) the strategic benefits of ABC, and (iii) the strategic limitations of ABC. The literature in these

areas supports the development of a strategic cost management model, and the use of ABC as a critical element within the model.

Operational advantages of ABC

ABC has significant advantages over its predecessor, standard costing. Standard costing is driven by volume measures such as number of production units or number of machine hours, and uses a predetermined ("standard") cost rate per unit to assign overhead costs (such as product design, and administrative costs) and evaluate performance. Standard costing thus assumes a direct relationship between overhead resource consumption by each unit of output, which has been shown to be unrealistic. Standard costing techniques are also based on work standards and standard costs that follow a top-down flow from management to line employees. Valuable problem-solving skills and process improvement insights from frontline employees may thus be lost, making these approaches inappropriate for strategic performance management.

A link is established between resources and activities, and between activities and cost objects, by identifying appropriate cost and activity drivers. These are factors that cause an increase in cost or activity consumption. By using volume of output, employee time, complexity, and other factors as possible drivers of costs, ABC estimates costs more accurately. Also, by providing realistic information about activities, their costs, their drivers, and how they link to form processes, ABC can provide information for activity-based management (ABM), i.e. decision making based on an understanding of costs and cost drivers, which can be managed and improved upon. For example, cost information obtained from an ABC system for a patient education program can also be used to evaluate the effect of changes in the system, such as providing certain modules of instruction via digital media.

The insights provided by a multi-driver ABC system can be very valuable to service organizations since almost all operating expenses in the service sector vary due to factors other than volume. For example, if hospital inpatient costs are driven by multiple cost

drivers, but are allocated based on a single driver, the reported cost and, consequently, the reimbursement to hospitals by insurers are hugely distorted. Scholars have further noted that ABC is most useful in situations where there are large, increasing expenses especially

for indirect and support resources, or where there is high diversity – with a variety of products, services and customers, or a combination of these variables.

For examples of patient education costs that are not driven by volume, consider the cost of maintenance of the building in which patient education is provided, or of maintaining computer systems. These are examples of overhead costs that are incurred to run a patient education program effectively, but are not directly proportional to the number of clients. So allocating these costs based on client volume alone would provide inaccurate cost estimates.

The ABC approach is therefore well-suited to a cost object such as a patient education program, where the relationship between number of patients (i.e. volume) and costs is not always linear.

Patient education is also a suitable candidate for ABC due to the rapidly increasing number and changing demographics of persons diagnosed with chronic diseases, and the wide variety of personalized services that are provided in these programs.

Studies have discussed the applicability and issues in implementation of ABC in various settings, such as manufacturing, financial services and healthcare. Though the goals of for-profit and non-profit organizations are different by definition, the literature does not show that ABC is any less applicable in the non-profit sector, though the decisions the ABC information is used for may differ.

Some real-world examples of ABC being used in the non-profit sector are seen in various departments in the Texas state government (Office of the Texas Comptroller, 2001). The use of ABC for operational cost analysis is therefore well-established. However, scholars contend that such cost analysis must be supplemented by strategic analysis in order to understand the true nature of a business problem or situation.

Strategic benefits of ABC

Strategic uses of control systems, including accounting systems, have been discussed in the academic literature.

ABC can be used to influence how strategy is formulated. Some suggested uses of ABC during strategy formulation include pricing decisions, supplier selection, customer profitability analysis, product design and development, and cost reduction.

Information from ABC could also impact the strategy process during the implementation and monitoring stages. ABC explicitly lists activities carried out in an organizational unit, and then allocates resource costs to the activities. This information could be analyzed to determine the relative importance of specific activities to the achievement of strategic objectives, and the associated costs. Resources could then be managed to better reflect organizational strategy. ABC would thus help strategy implementation by relating activities to goals, indicating contradictions between goals and resource consumption, and highlighting where improvements can be made. An ABC system could also be used to monitor an organization's strategic environment. Variations between plans and actual performance could draw attention to changes in circumstances that call for a change in strategic objectives, and the way they are implemented.

The strategic value of ABC in healthcare, which is the context of the current study, is now discussed further. Some researchers feel that increasing the visibility of activities may not automatically lead to better strategic control – especially in. In this sector administrative

control (i.e. bureaucratic powers) and collegial control (i.e. domination of the medical profession) must co-exist with ambiguous boundaries, and yet at odds. Knowledge-sharing between different clinical functions may occur ad hoc, without an established administrative protocol for such interaction being in place which makes such activities hard to identify and control.

However, given the increasing pressure of resource scarcity in the healthcare sector, some means of directing activity from the cost control perspective becomes necessary. It is suggested that "closer integration of bureaucratic and collegial control mechanisms" is a good way to fulfil this necessity, and that greater visibility of activities will result, at a minimum, in attempts to modify behaviour that affects strategic goal achievement. ABC models facilitate such integration, as they link costs, which in this case are the form of administrative control, to the activities needed to provide healthcare services to clients, which are largely the domain of medical practitioners.

Strategic limitations of ABC

ABC, though not used to monitor and reassess strategy, is considered to be an important component of strategic cost management and a useful strategic analysis tool. However, it is not powerful enough to be used as the primary tool for this purpose. Therefore, some means or criteria for evaluating the short-term and long-term strategic implications of control based on activity analysis are needed. This leads directly into the reasons for incorporating the BSC into a combined strategic model that can explicitly link costs to strategic objectives.

The strategic focus that BSC can provide to ABC

This section begins with a brief discussion about the development and uses of a BSC, followed by the how the BSC can be useful in a strategic cost management model, and finally, the modifications that are necessary for using the BSC dimensions for strategic cost management in a specific context.

About the Balanced scorecard

The BSC is a performance management tool that addresses the agency theory concern of implementation of legitimate stakeholders' concerns, and acts as a governance mechanism

by aligning agency performance measures with the principal's. These values are represented in the BSC by the organization's strategic objectives. The BSC links performance at various levels to overall strategic objectives by –

~ Identifying different important areas or perspectives of performance that an organization must excel at for strategic success. These usually relate to financial goals, customer needs, internal processes, and employee abilities, but can be modified to reflect a specific organizational reality.

~ Identifying specific, quantifiable measures or performance indicators within each dimension of performance. These can be financial or non-financial in nature, and are identified based on strategic objectives.

~ Setting targets for each of the identified measures. Individual and business unit performance can then be evaluated by comparing achievement of these targets. Areas for improvement can be identified based on variance between targets and actual measures.

The BSC thus provides a unified, strategic focus to individual and organizational performance, and communicates strategy at all organizational levels by providing performance targets that are consistent with strategy.

Cascading scorecards can be constructed at different levels, flowing from the organization, to a business unit, to a department, to a work team, to each individual. By measuring selected, strategically consistent outcomes at all levels, strategy can be communicated effectively. The BSC thus acts as a coherent strategy management system, by translating strategy into performance measures and targets, and communicating and enforcing a consistent strategy through the organization.

The next step is to discuss the adaptation of BSC's strengths to ABC and strategic cost management.

Using the BSC with ABC for strategic cost management

Scholars have discussed how ABC complements the BSC by providing information for performance measurement and the synergistic effect of the two systems on company performance.

The two reasons presented in this research to support the use of the BSC framework with ABC, in a combined strategic cost management model are – (i) to ensure the completeness of activity information by providing structure and, (ii) to promote a strategic view of costs. These are discussed below in more detail.

As the complexity of operations increases, ABC tends to become time-consuming and expensive to implement and maintain. To overcome this problem, activity dimensions can be used as a framework to collect, classify, and organize activity information.

One of the problems faced in strategic cost management is that no tool or method exists to connect strategic costing principles with their implementation at the operational level. A strategic cost management tool could create this link by taking advantage of the BSC principle that allows it to relate day-to-day performance to achievement of strategic goals .By clearly defining the goals of an organization (or organizational unit), and then identifying the different dimensions of activity and activity costs that are directed towards that purpose, an explicit link can be created.

In order for a combined ABC/BSC model to have true strategic value, the activity dimensions chosen for the model must reflect the specific context in which the model will be used. This issue is addressed in the following section.

Modifying performance dimensions to match strategic objectives

The model can link each activity dimension and individual activity to a specific strategic objective. Here, the activity information is the contribution of ABC, while the activity dimensions and link to strategy are provided by the BSC. The ABC process can provide the cost associated with each activity. We can then evaluate the resource consumption associated with the strategic contribution of activities and activity dimensions. For instance, some activities in the internal business process dimension, such as attending staff meetings and maintaining accounts, do not appear to link directly to any particular strategic objective.

They are still necessary components of the business but, due to their non-strategic nature, it might be possible to control the amount of resources such activities consume, without affecting the achievement of strategic objectives.

The next section of the study discusses in more detail how a combined ABC/BSC cost management model can be used for strategic control.

Potential uses of a combined model for strategic control

Ensuring cost control without affecting non-cost strategic goals could be crucial, especially in sectors such as public service and healthcare where strategic outcomes have socio-economic implications. By overlaying ABC and BSC principles, a combined model provides cost information, identifies the amount of resources particular activities consume, and links activities and resource consumption to the achievement of strategic objectives. Cost management decisions using the model could therefore be driven by more long-term considerations, rather than cost minimization for its own sake.

Based on the literature, two strategic uses of a combined strategic cost management model are identified. These are (i) to evaluate strategy implementation, by providing information

about the impact of decisions already taken, and (ii) to monitor the premises on which strategy is based, and provide information that could affect future strategic decision.

Evaluation of strategy implementation (Feedback role)

The model could be used to evaluate strategy implementation by using activity and cost information to show how activities relate to strategy, and what resources they consume. By showing where resources are being expended, in relation to strategy, a combined model can provide feedback about whether a strategy is being implemented as planned.

Monitoring the strategic environment (Feedforward role)

A combined model could draw attention to critical events that require a change in the way strategy has been created or implemented; assumptions that are not valid in the current environment; or factors that may not have been originally considered in the strategic planning process. These events or factors may make themselves known through distortions or variations in activity time and cost estimates obtained from the cost model. This information can then be used to make adjustments to implementation or to the strategy itself.

While cost information has traditionally been used to evaluate the internal efficiency of organizations, the use of such accounting information and controls to influence strategic purposes such as customer satisfaction, employee learning and improvement in activities has been criticized as misleading due to its rigidity and narrow scope

The discussion now moves to the context in which the combined ABC/BSC model is presented – healthcare and patient education.

Strategic management in healthcare

Strategic management is very important for healthcare organizations because of the constantly changing environment they operate in. The literature recognising this need and

discussing the role of strategy in healthcare organizations can be broadly categorized as (i) studies about internally focused, long-range operational and planning, (ii) studies discussing the importance of an externally focused, long-range strategic and (iii) studies presenting strategic tools and sources of strategic information in healthcare.

Internally focused long-range planning

There is a body of empirical and a priori research focusing on strategic ways to realize effective internal operations in healthcare. Some examples include strategic brokerage (i.e. the integration of diverse non-clinical support services to ensure effective operation of clinical activities), retention of nursing staff through improved work life, use of operations research techniques for strategic resource allocation in hospitals, cost control through outsourcing and the relationship between strategic orientation and level of diversity management.

These internally oriented studies tend to focus on the aspects of healthcare organizations that do not deal directly with the provision of clinical services but are important facilitators of the core services, and achievement of strategic goals. A strategic management tool that ensures that the strategic role of operational factors (both clinical and non-clinical) is not overlooked would therefore be useful, especially if it can also identify activities that consume resources without contributing to achievement of strategic objectives.

Externally-oriented strategic planning

Researchers have also discussed the role and importance of strategic planning and management in healthcare. For example, the importance of the various stages in the

strategic process (including implementation and continuous monitoring) in health services; a hospital's strategic competencies (i.e. the ability to deliver superior services resulting in competitive advantage) are positively related to financial performance; hospital executives are attempting to overcome traditional barriers to new ideas, and implement new strategic philosophies such as total quality management and business process re-engineering in healthcare; strategic relationships between hospitals and physicians using a transaction economics perspective.

These studies indicate that there is an increasing interest in strategic management in healthcare. However, though most hospitals tend to have internally-focused planning systems in place, not many have strategic planning systems that are externally-oriented, proactively attempting to understand the changing environment, and moulding themselves to achieve their objectives in that environment . Even in academic research, there seems to have been no attempt to present a practical tool that can be used as a source of strategic information. A combined strategic cost management model could address this gap by providing information for strategic decisions.

Sources of strategic information in healthcare organizations

Some studies have looked at the sources of strategic information and strategy formulation in healthcare. The strategic use of data from formal sources (such as circulated reports, information from experts, journal and magazine articles) and informal sources (based on experience, knowledge of operations, informal discussions etc.) in a health organization.

They conclude that "formal data should be limited, concise, and structured". A combined strategic cost model that uses the BSC framework could provide such specific, structured information for strategic decisions.

An example of a tool for strategic planning using a strategic information systems approach, and discuss the importance of incorporating internal and external analyses, and stakeholder

influences into the development of a strategic information system. Here again, a combined model that utilizes the different activity dimensions from the BSC approach could address the need for strategic information from different perspectives.

The importance of managing patients' education costs strategically

This section begins by discussing the role of costing in healthcare, followed by the importance of patient education, and the extant literature about the costs of patient education. As the combined model is developed using ABC and BSC, and is then applied to patient education, the applicability of each of these methods to healthcare and patient education forms the final part of the discussion.

The role of costing in the healthcare sector

An argument can be made that the strategic objectives of healthcare organizations, specifically patient education programs, are related to changing attitudes and lifestyles of clients, rather than to cost containment. Though this may be true, resource optimization is still a valid goal given the increasing pressure of resource scarcity in most healthcare systems. Detailed information about the components and drivers of relevant costs could guide decisions that improve operational efficiency, through improved cost management, efficiency in resource utilization and better resource allocation that is in line with non-cost related strategic objectives of a health program or service. In other words, while cost reduction may not be a primary goal, cost management can make resources available to meet strategic needs of healthcare organizations.

Some scholars have called for more research into the use of cost information for decision making in healthcare. Researchers have commented on the absence of evidence-based cost containment research that hospital managers can use in their decisions. Their three-stage cost containment framework identifies possible avenues of healthcare costing research. These include (i) the *cost measurement* aspect (such as the cost of services, types of information currently available, differences in systems across organizations), (ii) the *cost*

control aspect (such as effective cost control strategies, conditions leading to selection of one cost control strategy over another, non-financial impact of cost control efforts), and (iii) the *assessment of value* aspect (such as the impact of cost control on quality of services, value addition to healthcare organizations and society).

A combined ABC/BSC model could address issues from all three stages of strategic cost containment in healthcare. A combined model could use the ABC approach to identify the costs of processes. Strategic activity dimensions would be provided by the BSC aspect of the model, and costs could therefore be measured for these dimensions as well. While ABC on its own could address the cost measurement aspect, the added strategic focus of the BSC is needed to address questions in the other two areas (cost management and assessment of value), which link costs to strategy achievement. As discussed earlier, ABC does not create this explicit link to strategy and so, as a strategic tool, a combined ABC/BSC model would be more useful than a traditional ABC model.

COST MANAGEMENT IN CONSTRUCTION INDUSTRY

The Construction activity which, inter alia includes building / re-building / restoring structures or infrastructure facilities, typically using civil, mechanical or other branches of engineering, plays an important role in the development of the economy as it has multiplier effect across various sectors creating investment opportunities.

The construction industry contributes a significant share of the country's GDP and employment.

Features of a construction contract / project are as follows:

• Execution of projects as a contractor / sub-contractor or as a developer.

• Projects involving design, detailed engineering, procurement, manufacturing / fabrication, installation, commissioning.

• The contracts / projects are finalised normally through a bidding process and the projects are executed as per client's requirements at client's project site.

• The client normally makes payment based on the progress of work as per the contract.

• Contracts also normally stipulate work / quality certification by a client nominated third party consultant.

• Contracts also lay down performance guarantee conditions, warranty / defect liability period, liquidated damages for schedule delay, price variation clause if any, client's obligations during construction period, method to be followed for any change in scope of work, claim management, force-majeure clause, arbitration etc.

• The duration of a project may vary from project to project for different industries. Normally the projects are of long duration (more than 12 months) and revenue is recognised generally based on Accounting Standard (AS-7) notified by Government of India, Ministry of Corporate Affairs.

The major areas / projects where the construction industry is active may be as follows:

(I) civil aviation project,

(II) Ports,

(III) Environment,

(IV) Oil & Gas,

(V) Power,

(VI) Roads,

(VII) Railways,

(VIII) Rapid Mass Transport System,

(IX) Urban Infrastructure,

(X) Water Supply,

(XI) River Linking Projects,

(XII) Sewerage Projects

(XIII) Solid Waste Management Projects

(XIV) Roads, Bridges, Flyover

(XV) Housing, Land and Township Infrastructure Development,

(XVI) Air-Taxi Project, etc

(XVII) Development of Industrial Land including Special Economic Zones. The categories under which the Constructions Industry may be operating are:

• Construction involving civil and heavy engineering

• Real estate and Property development

• Construction projects involving specialty trades

Few examples of above categories are as under:

- Construction involving civil and heavy engineering
- Industrial and mining infrastructure
- Highways, roads, ports, railways, airports etc.
- Rapid Mass Transport System,
- Water Supply,
- Bulk Material Handling
- River Linking Projects,
- Sewerage,

- Solid Waste Management
- Power systems
- Irrigation and agriculture systems
- Telecommunication system
- Real estate and Property development
- Commercial real estate
- Housing, schools, hospitals, Land and Township Infrastructure Development,
- Construction projects involving specialty trades
- Refineries, Chemical plants, Fertilizer plants including complex and heavy process plant equipment
- Oil and Gas projects including fabrication of Process Platforms, construction
- of sub-sea and other pipelines
- Floating systems
- Power projects
- Nuclear Power Plant Construction
- Transmission and distribution lines
- Electrical construction Project Models

Public Private Partnership (PPP) Model

Project under PPP arrangement, i.e. development, financing, constructing, maintenance and operation, are implemented for the Project Term by a Private / Public Sector Company to be selected by the Government or a statutory entity.

The PPP Projects are usually in the following sectors:

• Roads and bridges, railways, seaports, airports, inland waterways, hotels;

• Power generation, transmission etc.;

• Urban transport, water supply, sewerage, solid waste management and other physical infrastructure in urban areas;

• Infrastructure projects in Special Economic Zones

PPP Projects normally operate on the following basis:

• BOT - Build, Operate and Transfer

• BOOT - Build, Own, Operate and Transfer

• BLOT - Build, Lease, Operate and Transfer

• EPC - Engineering, Procurement and Construction.

• DBFOT - Design, Build, Finance, Operate and Transfer

Real Estate Development Model

The term real estate is essentially used in connection with development of land and construction/development of everything that is permanently attached to the land.

These permanent fixtures to the land include buildings, fencing to the buildings and other fixtures such as plumbing, heating and lighting appliances.

Real estate development is the act of purchasing land, real estate, and making improvements to the land and / or existing buildings on it and / or new construction -

- Either by themselves or by contractors and selling the property after development.
- Developers purchase the land / real estate from Government / existing owner.

Some commonly used models of Real estate development are:

• Green field development (Traditional model)

• Redevelopment model

Examples of Real estate development projects are:

• Housing, Land and Township Infrastructure Development

• Development of commercial real estate

• Development of Corporate IT parks

EPC Contracting Model

The Developer of a project (either Govt or Private Player under PPP model) delegates a portion of the contract to an EPC (Engineering, Procurement and Construction, including installation, commissioning etc. wherever applicable) Contractor. These contracts are

finalised normally through a technical and commercial bidding process and the projects are executed as per client's requirements at the project site.

Examples of commonly used models of EPC contracts are:

• LSTK- Lump sum turnkey contracts

• Cost plus contracts

• Item Rate Contract

• A Combination of above

The EPC Contracting model is used by every contractor or sub-contractor for executing a construction contract awarded either by Govt. or Private Player under PPP model.

Construction involving in-house fabrication or manufacturing

Companies, as Developer or Contractor may have in-house facilities for undertaking long duration (more than 12 months) manufacturing / fabrication of equipment / structures for use in the main construction project.

These equipment / structures are manufactured / fabricated as per client's design, specification and other requirements, which are unique for each contract. Materials are either procured by the Company or provided by the Client based on the terms of contract.

The business model generally involves engineering, procurement, manufacturing / fabrication, transportation to project site and installation / commissioning in the main construction project.

Examples of in-house fabrication or manufacturing used for construction projects are:

• Cement concrete slabs, beams, columns etc. for infrastructure projects

• Reactors for Chemical Plants

• Heat exchangers for Fertilizer Plants

• Process platforms for Oil & Gas exploration projects

• Transmission towers for power transmission line projects Maintenance of Cost Accounting records by the Construction Industry.

The Rules have prescribed that cost accounting records are required to be maintained in accordance with the "generally accepted cost accounting principles" and the "cost accounting standards" issued by the Institute of Cost Accountants of India to the extent these are relevant and applicable. The rules do not prescribe any specific format of cost statement and the company is free to adopt a system suitable to provide cost information.

There cannot be any exhaustive list of cost records that are required to be maintained. This would depend on the particular situation, structure of the company and the activities that the company is engaged in. What is intended is to ensure maintenance of such records and details in a structured manner on a regular basis so that the accumulation is possible on a periodical basis to arrive at the cost of a particular cost object. Such analysis of individual cost components and relating it to the activity for which the same is incurred would help the company in taking proper management decisions.

It should be kept in mind that in a manufacturing organisation, the operations include certain repetitive processes resulting in a particular “product” that can be measured in finite manner. In a construction activity, each project or operation can be different and distinct and there is a need to define the “cost object” in relation to which the costs are required to be accumulated and reported.

Reference is also drawn to the product group classification notified by the Ministry of Corporate Affairs where the construction industry has been classified under the following service groups:

a) Construction of residential buildings

b) Construction of non-residential buildings

c) Construction of highways, road, bridges etc.

d) Construction of industrial and non industrial plants, structures and facilities

e) Laying of pipelines, communication and power lines

f) Other construction activities not elsewhere specified

g) Real estate development activities

h) Architectural and engineering services

i) Construction and Real Estate Related Services

Exemption from applicability of Companies (Cost Accounting Records) Rules 2011, to the construction Industry:

- Companies engaged in construction business as contractors or subcontractors wherein they are paid only the conversion charges (MCA Circular No. F. No. 52/1/CAB-2012 dated 25th May 2012);
- Joint Ventures that are non-corporate entities [i.e. not companies registered under the Companies Act] or to unlisted companies that are below the specified threshold limits or to a body corporate governed by any special Act. (MCA Circular No F. No. 52/1/CAB-2012 dated 25th May 2012);
- Companies which have not commenced their business are exempt for maintenance of cost records till their business operations commence. The term "commencement of business" is to be read in context of section 149 of the Companies Act 1956. In case of a manufacturing company, commencement of commercial operation means the plant has been commissioned on a commercial scale. In other context, commencement of business operations is to be read as defined under the above section.

Applicability of CARR for various construction projects modals is given below:

• PPP model:

The primary business model is Build, Operate and Transfer. CARR will be applicable from the time the Company starts building or constructing the project (either by themselves or through contractor).

• EPC Contracting Model

The business model is primarily Engineering, Procurement and Construction.

CARR will be applicable from the initial stage of Engineering or construction, as applicable.

• Real Estate Development Model

The business model is primarily development and sale of real estate. CARR will be applicable from the start of development /construction activity.

These rules will not apply to construction activity which is not meant for sale or for commercial use. For example, a company not engaged in construction business, but constructing staff quarters for its employees or erecting manufacturing plant, will not be covered under the maintenance of CARR relating to Construction activity. Such companies shall be covered for the maintenance of cost records as and when company commences commercial production.

Nature of cost accounting records for construction activity

Companies are to maintain books of accounts as per section 209 of the Companies Act 1956, including cost accounting records on going concern basis. Therefore even if a company has not commenced any project or activity, still records are required to be maintained. The broad elements of cost / activities for which detailed cost records are required to be maintained are direct material, direct labour, direct expenses like certification cost, subcontracting charges and so on, utilities, major items of overhead expenses, depreciation, royalty / technical know-how, interest and other borrowing costs, captive consumption, self

manufactured products, inter-company transactions etc. In case of companies engaged in manufacturing or production of items for self consumption then:

(a) Valuation of product which are covered under CETA, shall be in accordance with Central Excise Valuation (Determination of Price of Excisable Goods) Rules, 2000 read with CAS-4 (Cost Accounting Standard on Cost of Production for Captive Consumption), wherein valuation is to be based on cost of production plus 10% margin for determining the assessable value under the above rules.

(b) For determining the value of inter-unit transfer of items for captive consumption whether excisable or not, the value shall be only at cost of production.

(c) Detailed records for other elements like research and development cost, quality control cost, pollution control cost etc. shall be captured, if material.

Cost Object

The Companies (Cost Accounting Records) Rules 2011 requires records to be kept on regular basis in such manner so as to make it possible to calculate per unit cost of production or cost of operations, cost of sales and margin for each of its products and activities for every financial year on monthly/quarterly/half-yearly/annual basis.

Hence, it is necessary to define cost object in relation to a construction activity. In a manufacturing activity, there is a well defined product that emanates out of the manufacturing/production process which is uniform across the product range of that product. In case of construction activity, each activity and sub-activity involved in the process of attaining the final output is unique and the final output would also be different from one to the other.

For example:

(A) A company engaged in construction of residential flats may have different types of flats in the same building, and in blocks of flats, the buildings containing those flats may be different in structure and construction. The Project in the context of construction activity is to be considered as the cost object. A company is constructing 3 residential projects A, B & C in 3 different places.

Project A consists of 3 buildings, Project B consists of 5 buildings and Project C consists of 2 buildings each of such building containing different types of flats.

The company is also engaged in Project D which is construction of a 15 KM stretch of road which also includes a Bridge. Project E of the company is construction and erection of a Power Plant. The company has received the contract of road and bridge construction as 2 separate projects (say Projects D1 and D2).

For maintenance of cost accounting records, the company would be required to maintain specified records in respect of Projects A, B, C, D1, D2 and E as it's distinct and individual cost objects. Detailed cost records are also to be maintained for each sub cost centre / sub project. These records are also used for internal reporting (MIS) and decision making process as these are useful for determining the cost of project / activity separately.

Methodology

Project Costing Methodology

Once a project is awarded based on Technical / Commercial / Price evaluation, a distinct project number is allotted for each project and the same can be in the form of Work Breakdown Structure (WBS) or Sub-project numbers etc. All costs incurred for the project should be captured against its WBS number / cost object / Sub-project number. All common functions like Quality Control, HR, Finance & Accounts, Legal, Secretarial etc. is to be

identified by separate cost centre codes and all costs relating to such functions is to be assigned to respective cost centres. These costs are to be absorbed by the projects by use of appropriate recovery mechanism.

Variances between budgeted and actual costs are to be reviewed at periodic intervals and necessary corrective actions / adjustments are to be carried out.

Usage cost of common pool of Plant & Machinery:

Construction companies typically use fixed assets like cranes, crushing equipments, etc. which are used over multiple projects. All such common assets can be under the control of a separate department with the objective of improving the utilization and productivity of such plant and machinery and the resultant operating efficiency of the projects. All costs (like salaries & wages of department and operating staff, fuels, consumables, repairs & maintenance, consumable spares, insurance, depreciation, specific interest cost etc.) relating to such plant and machineries are to be accumulated in distinct cost centre codes and an internal hire rate for different types of machinery can be worked out considering the normal utilization of such assets.

Projects using such assets are to be charged based on utilization at the agreed internal hire rate. Any under / over recovery of cost of this department is to be periodically reviewed and necessary corrective actions / adjustments are to be carried out.

Revenue Recognition

Construction industry maintains its accounts and recognises revenue on the basis of Accounting Standard - 7. The revenue recognition for cost accounting records would follow the same principle. The elements of costs and revenue would be based on the same principles as adopted for its financial accounting.

Cost statements would be prepared in respect of individual projects as explained above. For continuing projects, the costs would represent the amount of expenses pertaining to the project as considered in its financial profit and loss account.
Similarly, the corresponding revenue recognized for the project during the financial period would be considered for arriving at the margin as per cost accounts.

Expenses, which are classified as non-cost items as per the generally accepted cost accounting principles and cost accounting standards should not be considered as a part of cost and should be considered as a charge in the costing profit and loss account (reconciliation statement between cost accounts and financial accounts).

In respect of large companies engaged in various different construction projects, the administrative overheads and corporate expenses are not allocated to individual project accounts. However, for cost accounting records and to arrive at the true project costs, such overheads should be apportioned to individual projects on a suitable basis.

Interest and financing charges, not directly related or identified with a particular project should be apportioned to the projects on a suitable basis.

Rules 4(3) of the CARR 2011 provides that the cost records shall be maintained in accordance with the generally accepted cost accounting principles and cost accounting standards issued by the Institute; to the extent these are found to be relevant and applicable. The variations, if any, shall be clearly indicated and explained.

The Institute has notified the Generally Accepted Cost Accounting Principles (GACAP) in November 2011. GACAP is compilation of Cost Accounting Principles currently being followed in India. It has also incorporated the principles contained in the Cost Accounting Standards (CAS) issued by the Cost Accounting Standards Board (CASB) of the Institute.

The applicability and relevance of the GACAP and CASs to the construction industry is discussed below.

Each contract / sub-contract is a cost object and costs are to be captured contract wise. Since each contract is a heterogeneous, job costing system is applicable.

In construction industry / real estate development activity jobs are executed on contract / project basis. Each contract / project is a separate cost object. Accounts are being maintained by the construction industry in compliance with the provisions of relevant Accounting Standards. Costs are accumulated for each contract / project which is regarded as a separate activity for cost determination and control. Most of the expenses incurred are of the nature of direct expenses. The indirect expenses mainly consist of office and administration costs, expenses relating to repair, workshop, expenses of stores / store yards, cost of special plant and equipment and architect's fee etc. The depreciation of plant and machinery deployed at site is debited to Contract.

Applicability of CAS:

Cost Accounting Standards have been issued and their applicability is discussed as under:

CAS 1 (Classification of Cost Applicable) - To be applied for proper classification and assessment of cost of a cost object and for preparation of Cost Statements on consistent and uniform basis.

CAS 2 (Capacity Determination) - Not Applicable for construction activity.

CAS 3 (Overheads) - Equally apply to Construction activities. Overhead expenses are to be classified as Site / Works / Construction Overheads, Administrative Overheads. Selling Overheads or any other classification as may be applicable. For control purposes, the

Overheads are to be classified as Fixed, Variable or Semi Variable, keeping in mind the nature and purpose of the cost. Absorption of overheads is to be done on suitable / rationale basis viz. estimate of efforts involved etc.

CAS 4 (Cost of Production for Captive Consumption) -Applicable to the extent relevant

CAS 5 (Average (equalized) Cost of Transportation) - Applicable to the extent relevant

CAS 6 (Material Cost Applicable for measurement / assignment of material cost)- Quantitative details to be kept as practice in the industry and materiality of the material cost.

CAS 7 (Employee Cost) - Applicable for measurement / assignment of employee Cost

CAS 8 (Cost of Utilities) - Applicable to the extent relevant

CAS 9(Packing Material)- Cost Not applicable

CAS 10 (Direct Expenses) - Applicable

CAS 11 (Administrative Overheads) - Applicable to the extent relevant

CAS 12 (Repair& Maintenance Cost) - Applicable to the extent relevant

CAS 13 (Service Cost Centre) - Applicable to the extent relevant

CAS 14 (Pollution Control Cost) - Applicable to the extent relevant

As stated earlier, the companies in the construction industry are already maintaining the records as per Accounting Standard (AS-7) or cost records as per their MIS requirements. To have uniformity and consistency in the treatment of various elements of cost, it is desirable that companies shall lay down a cost accounting policy to cover the following areas:

a) Identification of cost centres / cost objects (projects) and cost drivers.

b) Accounting for material cost, stores at store yards, employee cost, and other relevant cost components.

c) Accounting, allocation and absorption of Overheads

d) Accounting for Depreciation / Amortization, Transfer in and transfer out of equipment from the site.

e) Accounting for scarps, wastage etc.

f) Basis for Inventory Valuation

g) Methodology for valuation of Inter-Unit / Inter Company and Related Party transactions.

h) Treatment of abnormal and non-recurring costs including classification of other non-cost items.

The policy shall be adopted for determining the cost of the project.

About ISMA

Indian Society of Management Accountants is association of CMA professionals representing leading strategic management accounting professionals of India who integrate accounting expertise with advanced management skills to achieve business success. CMAs are capable of assuming strategic leadership and management roles in a broad range of business functions, adding value to an organization, enhancing its competitiveness and maximizing shareholders' value.

www.cmaonline.in

About BIMTECH

Birla Institute of Management Technology was established in 1988 under the aegis of the Birla Academy of Art and Culture, and supported by Birla group of companies. Dr. (Smt.) Sarala Birla, chairperson of Birla Academy and Syt. B K Birla, chairperson of B K Birla Group of companies are the founders of the business school. The Board of Governors is comprised of eminent people from industry and headed by Smt Jayashree Mohta, Vice Chairperson, Birla Academy of Art & Culture, Kolkata.

www.bimtech.ac.in