

Activity Based Costing, Management and Budgeting, With an Application to the Hospitality Sector

Author Details: Meshal A. A. Alsorkhee

Istanbul Aydin University, Institute Of Graduate Students, Department Of Business (English) Halit Aydın Kampüsü No:38, Sefaköy–Küçükçekmece, Istanbul, 34295
meshal.alsorkhee@email.com

Abstract: The aim of this study to determine the success of the application of the Activity Based Model in the hospitality sector, this model consists of three main axes which start from Activity Based Costing that works to build a new structure containing products and services and all the activities consumed by these products and services, whether directly or indirectly and then determine the cost of each of these activities accurately and depending on the Cost Driver that links the activity with the product And service and then make cost pool for these activities for each service or product independently and the sum of these cost pool for services and products is the combined cost of the hotel, in a way that links products and services with activities, these activities consume different hotel resources., The role then comes on the second axis, namely the Activity-Based Management system this using the Activity Based Costing data as an input in order to improve the added value activity and eliminate the non-value-added activity, this will lead to Increase the profitability of the company and provide products with high value added, also it is a tool designed to help managers improve the performance of operations and to reduce costs by analyzing activities, and to help managers to develop more accurate methods to determine the cost of products., Activity Based Budgeting is also used the Activity Based Costing data based on the philosophy of activities and are the general criterion for budget performance, they are allocated to Activity Based Costing and do not include any costs not allocated to specific activities or activities that do not add value to the product, it's a financial plan that starts with determining the size of the products and then determining the level of activity required to perform the work for a certain period

Keywords: Activity Based Model, Activity Based Costing, Activity-Based Management, Activity Based Budgeting, Cost Driver.

1. Introduction

Many good results came from applied the Activity Based Models (ABMs) to companies this includes (ABC, ABB and ABM). Most researchers confirm that industries that chose this model may have a lot of benefits and they will develop their strategy. (Horngren, Datar and Rajan, 2015, p.131) mention that the purposes for adopting ABSs in the all industries: production techniques, product life are getting short, competitive pressure, diversity in the type of services, inaccurate cost determination of overhead costs and the costs of operating and developing the ABM have reduced by the computer technology.

There is a widespread recognition that the world is changing, the Activity Based Management is a procedure that originated in the at the beginning of the eighties for analyzing the processes of a business to identify weaknesses and strengths and now a day is an important role helps the managers to seek out areas where a business is losing money so that those activities can be eliminated or improved to increase profitability. Activity Based Management goes through all department on the organizations by analyzes the costs of employees, equipment, facilities, distribution, overhead and other factors in business to determine and allocate activity costs.

2. Activity Based Costing (ABC)

The cost accounting helps the management in all levels to masseur and analysis the costs, and providing the financial information and showing the profit and loss and the and the statement of financial position at the end of the financial period , with time the cost accounting become more managerial tool which is cost management by using the modern accounting model which have important role in the planning of costs and control of their occurrence, through the so-called life of the service, which helps to achieve the objectives required and the most important of these goals

reduce costs because of its impact in addressing the challenges and current and future challenges .

The increasing number of hotel groups, which were followed by developments in all areas in the provision of services and products in these hotels, which led to an increase in the proportion of indirect costs in all hotel departments at the expense of direct costs, all this was caused by the reduction in the use of traditional methods in the calculation of costs, especially the method used to charge the Indirect costs on products and services provided

The Activity Based Costing System aims to achieve greater accuracy in calculating the indirect costs of the activity unit leading to a more accurate measurement of the cost of that unit. Rather than relying on the traditional method of linking the indirect cost components to the cost centers, , Then the allocation of production centers to the unit of the product according to the basis of arbitration does not lead to a fair distribution of indirect costs, and then access to an inaccurate measurement of the cost of the production unit, it becomes the use of the input of the Activity Based Costing when determining the relationship between the activity unit and materials (cost elements) They are created Demand for activities and activities creates demand for resources (alfadel et al.,2007, p.35)

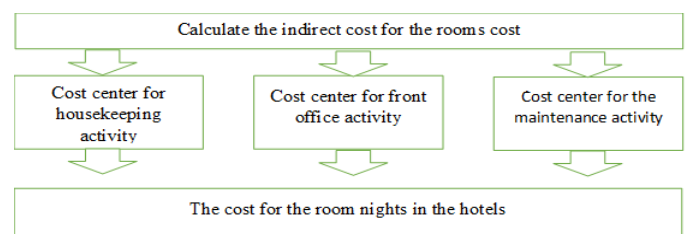


Figure 1:Technique for Allocate Costs Based on ABC

2.1 Cost Driver

The Cost Driver can be Defined as:

A quantitative measure of activity output, the choice of the cost-of-activity factor reflects a fundamental point between accuracy and measurement cost (Al-Qabbani, 2009, p.47)

It can also be defined as the factor that leads or directs the costs of the activity related to the presentation of a certain cost towards a certain behavior and within the appropriate range and during a certain period. The cost driver the is effective additions made by the system ABC in the field of performance improvement and there are several classifications of the cost driver we will review the most important (Hijazi 2012, p114)

2.2 The Main Steps to Apply ABC

The main steps taken to implement the ABC system are very important for the success of this system and its proper application (Al-Tikriti, 2007, p.168)

2.2.1 Planning

The planning stage is one of the important stages in determining the success of the design and implementation of the ABC system in any company. At this stage, an appropriate team is prepared for the design and implementation of the system. This stage also identifies the problems facing the company and determines the type and level of information required of the decisions related to those problems, as well as solve the problems related to the current management environment and develop its working style in line with the new system.

2.2.2 Identifying and Assembling Activities

This stage is the beginning of the actual design of the system where the study of company and identify the nature of work in each department and how the process of production, where the level of accuracy and expansion in the analysis of activities depends on the management decision and the level of information required in order to obtain the highest benefit with the lowest costs necessary to operate and maintain this system In general, the ABC system is based on the identification and analysis of activities from the beginning of ordering materials or services through the production process and ending with the activities of placing the product on the market

It is worth noting that if the activities are few, it is possible to allocate the cost of each activity using its own cost driver directly to the products, However, if there are a large number of activities, it can be grouped into cost pools so that each cost pool contains a number of activities where a single cost driver is used for each cost pool of activities, taking the following conditions in mind:

- a. The cost pool should contain homogeneous activates, that's mean the cost driver following the cost pool contained highly related activates, in other words the change in the level of activity in the cost pool reflect the change in the other activates
- b. The costs in each cost pool completely suitable for an activity where proportionality here means that all costs must be adjusted proportionally to changes in activity level. The analysis process begins by identifying the main functions of the company and then the organizational department necessary to achieve the goal of each job. Then, the study and analysis of the processes and events within each department to determine the activities. The following figure shows three levels: the first level shows facility functions

and the second level show the departments functions and the third level shows the departments activates

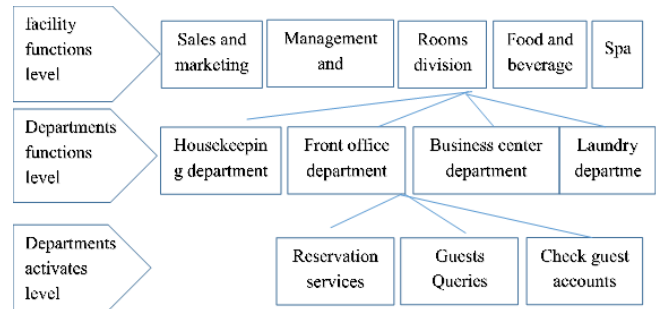


Figure 2:Facility Functions, Departments Functions and Departments Activities

2.2.3 Record Activities Costs

After determining the activities and their processes, the costs of these processes are recorded for each activity. The cost of the activity is equal to the total cost of the processes for the specific activity, and to determine each activity the information available in the accounting records can be used, the necessary estimates are made when we didn't have clear information about any process. The following figure shows the hierarchical organization of the Facility costs according to activities

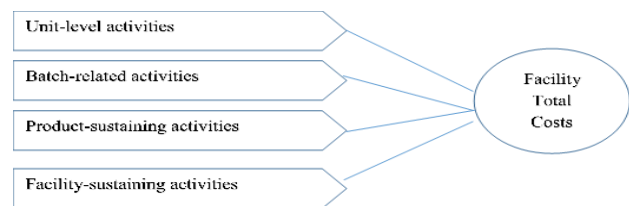


Figure 3:Hierarchical Organization of the Facility Costs According to Activities

2.2.4 Determine the Activity Centers

The activity centers are the section of the production process through which the management wishes to record the cost of activities. The choice of this ABC system design does not affect the cost of finished products. The effect is on how to record this cost. The traditional system may record a certain product cost of \$ 50, While the ABC record the same product cost of \$ 30 for production activity and \$ 20 for delivery, and the ability to record costs by activity centers gives managers greater control over activities

2.2.5 Choice the Cost Drivers

The cost driver concept in the ABC system is "the measure that reflects the underlying reason for the cost element within each activity or in the cost pool - the cost pool is the lowest level of detail at which the costs are aggregated and distributed whether it is a single activity or a combination of Activities have the same utilization rates – the cost driver should be chosen so that they involve a clear causal relationship with activities "(Abdullatif, 2003, P355)

It is possible to link the costs of activities and the end product with the same methods used to link the costs of resources and activities (direct charging, estimation, arbitrary allocation) but the multiple types of products in most enterprises make the

process of customization following the previous methods useless, so most ABC system designer's uses the appropriate number of cost drivers. (Essa, 1995, p.22)

Thus, in the ABC system, the cost driver is chosen in a more precise and objective manner depending on the nature of the activity being implemented. This process can be divided into several levels shown in the below figure:(Hujair, 2003, p.86)

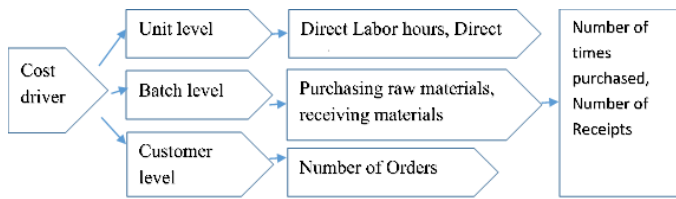


Figure 4: Cost Drivers Levels

In general, the cost drivers can be divided into two main types: (Essa, 1995, p.111)

- a. Process-specific cost drivers: They are "Factors that focus on the number of times a single activity is performed and it is used if the product group needs the same amount of activity", such as the number of times the kitchen equipment is maintained, the number of times the rooms are cleaned.
- b. Time-specific cost drivers: They are "factors that concern the period required to produce a particular product and it is used if the volume of the activity to be varied varies according to the quality and quantity of the final product, such as the hours of the warehouse workers

And the trade-off between these two types of cost drivers is economic fundamentals, time-specific cost drivers are more accurate than process-specific cost drivers but at the same time more expensive when applied.

It may therefore be economically feasible for several homogeneous activities to be grouped into a cost pool having one cost driver, but the problem is that the greater the number of activities collected in a single cost pool, the less likely it is to determine one cost driver. So, the cost drivers should be chosen that make a reduction in the cost of application of the system without compromising the accuracy of the target system (Brinson, 1991, p.3)

The following factors must be considered in determining the appropriate number of cost drivers (Attie, 2000, p.40):

1. Accuracy required in cost data:
2. The higher the number of a cost driver, the more accurate the cost numbers, which means that whenever an entity wishes to increase the accuracy of cost reports, it will be necessary to increase the number of cost drivers to achieve the required accuracy.
3. Production diversity:
4. The greater the diversity of products produced by the establishment in terms of heterogeneity, the greater the number of cost drivers to reflect the different consumption of each product for the different activities, thus the positive relationship between product diversity and the number of cost drivers.
5. The ratio of cost of the activity to total cost of activities as a whole:
6. In activities that are small in relation to the total incremental cost of an enterprise, it is best not to have multiple cost drivers even if each activity contains a

heterogeneous set of works. In this case, it is important to choose a cost driver with the highest correlation with a group Cost for this activity.

7. If the cost of the activity increases to the total incremental costs of the enterprise, the use of one cost driver may result in a significant reduction in the level of accuracy desired in the cost data and the need to achieve homogeneity of the business performed within the activity and the cost associated with the activity cost driver
8. Cost of compiling cost drivers' data (Cost of measurement):
9. The higher the number of cost drivers required, the higher the cost measurement for the costing system. If the cost driver is characterized by the difficulty of compiling its own costs, in this case it must be ascertained that the benefit of this expansion in the number of cost drivers exceeds the cost of compiling the data of these drivers. Expanding the number of drivers will not increase the cost of measurement. In this case, it is appropriate to expand the number of cost driver to increase the accuracy of the cost data

3. Activity-Based Management (ABM)

3.1 Introduction

The competitive environment in which most companies operate in different types requires us to make the decisions that will continue production and then stay in the market, with a focus on high quality products and services provide to the market while reducing their costs, which leads to increase the profits of the company at the same time keep the consumer satisfaction compared to other companies

The role of management is not only to maintain the cash flow, but has many of those functions that relate to the continuity of the company or not, the most important functions of the management planning, organization, direction and control

For the administration to perform the required functions, it is necessary to make different types of managerial decisions and the most important one it is the pricing decisions, the managerial decisions that aim to regulate the company's internal and external work, these decisions related to the survival of the company and profitability and achieve its objectives

The management depends on the decision taken on any information related to this decision. As a result, the safety, quality, timeliness, accuracy and relevance of the information to the problem to be decided will greatly affect the decisions taken and hence the results. After knowing what information and what type of result from the Activity-Based Costing technique, emerged the need to rely on that costs information when making management decisions

3.2 Activity Based Management System Definition

The ABM an effective management style designed to improve the performance of operations (Bahnum, 2010, p.7)

And, A system that focuses on managing business activities and processes as a tool for continuous improvement by adding a value of the product to consumers or in achieving profits (Cokins, Capusneami, 2011, p.48)

The ABM system aims to help managers to develop more accurate methods to determine the cost of products (Muras,

Calhoun and Stripling, 2000, p.2)

As well ABM A system that focuses on activities to reduce waste, reduce operating time and reduce damage, and can be used in industrial and service companies (Brewer, Garrison and Noreen, 2011, p.138)

Likewise, it is an administrative approach that focuses on administrative activities as a tool to minimize waste, reduce delay and improve production (Garrison, and Brewer and Noreen, 2012, p.300). Furthermore, it is a tool designed to help managers improve the performance of operations and to reduce costs by analyzing activities, analyzing cost drivers and measuring performance (Roberts, Muras and Paschall, 2002, p.621).

And what the researcher sees the ABM it's a system using the ABC data as an input in order to improve the added value activity and eliminate the non-value-added activity, this will lead to an increase in the profitability of the company and provide products with high value added.

That the ABM system is a method of cost management and uses cost data for the activities that make up the enterprise in making administrative decisions that are used to reduce cost and improve performance and improve consumer value and improve profitability as well, (Al-Yamour, 2010, p.231)The ABC system and its relationship to the ABM system can be illustrated in the following Figure (Bahub, 2010, p. 7)

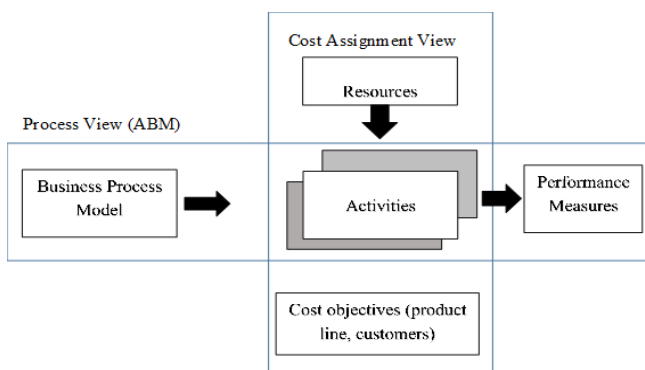


Figure 5: The Relationship Between ABC and ABM (Bahub, 2010, p. 7)

3.3 The Outputs of ABM System

According to (Cardos and Pete, 2011, p.160-161) the outputs of ABM System for any company it will be as bellow

- The cost of activities and the business processes information.
- The non-value-added activities cost
- Performance measures for the activities
- Accurate identification for the products and services cost (cost objects)
- Cost drivers

(Miller, 1996, p.236) CIMA (2001).

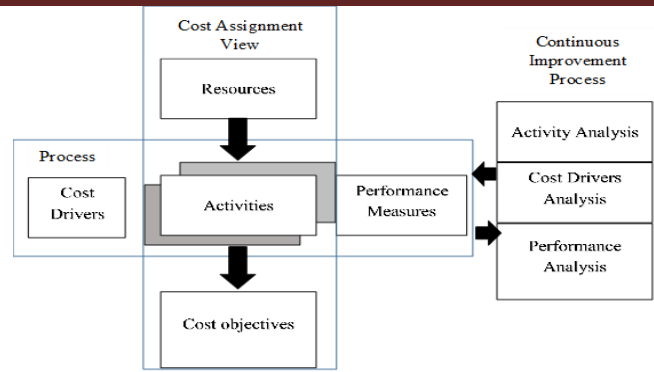


Figure 6: ABM Outputs

3.4 The Main Steps to Apply ABM

Pilot efforts to experiment with ABM do not always take a company-wide perspective. As a result, isolated pockets of ABM knowledge can develop independently of other management initiatives. This is not necessarily a negative situation, but to achieve its full potential ABM information systems need to become integrated with mainstream information systems and reflect the organization's cultures and values. As most organizations have learned, a holistic approach to ABM implementation is crucial to gaining and sustaining all of ABM's benefits. When a total approach to ABM implementation is taken, it is important first to complete an overall assessment of the key Processes, activities, and data availability. The elements to be included in the assessment are:

- business process relationship map;
- documentation and relationship of key business processes;
- preliminary list of key and significant activities;
- identification on a preliminary basis of major activities, including possible performance measures and potential cost drivers;
- preliminary costing of activities and business processes;
- estimates of nonvalue-added activities and costs;
- linkage of business processes and activities to the organization's strategic plan;
- application of ABC product/service costing;
- availability of data and information required for the installation;
- existing system capabilities and ability to integrate with activity information;
- primary uses for activity-based information;
- available resources and implementation requirements; and
- recommendations for implementation, steps to be taken, and key timelines.

This preliminary information supports the development of an overall implementation plan. Using a building block approach, the implementation can be completed for one major segment of the business at a time. The steps that need to be completed for each segment include detailed planning, analysis, data gathering, cost tracking, and documentation. Total implementation is complete when a cost-effective, ongoing data collection and reporting system has been developed.

Whether applied on a small scale to a specific area of an organization, such as a department, function, or applications, or used for large-scale implementation in a specific plant or applied simultaneously to several plants, facilities, departments, or functions, there is no one right way to

implement ABM. In fact, the general steps involved in taking a holistic approach to ABM implementation can be expressed in several ways and can be performed in different sequences

4. Activity Based Budgeting (ABB)

4.1 Introduction

The management of large, small and medium-sized enterprises requires constant and continuous management of four functions: planning, organizing, leading and controlling. These functions apply to all companies, whether large, small, and even medium-sized companies that aim to profit or aim to provide public service. To develop strategies and plans, lead and organize efforts and resources, and control their use. therefore, we find that the most important objectives of the modern departments, at the level of economic or international unity, the optimal use of resources (physical and human) and develop the greatest amount of resources to achieve the company's objectives, including reducing costs and continuity and maintain customers and achieve the largest market share. The four management functions and the relationship between them, the relationship between these functions is integrated and interrelated, it is an integrated cycle to achieve the goals that were set in advance at the stage of establishing the companies. As the figure shows, the way that links these functions leads us to achieve these goals. Referred to and that there is a defect in the process of achieving these goals must be corrected the course of these jobs to address any defect that has occurred and impact on the achievement of these goals, the role and management functions can be clarified by the following figure

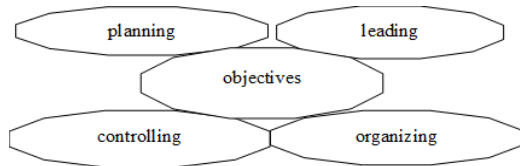


Figure 7: The Relationship Between the Management Functions

The tremendous progress in the information and communication technology revolution and advanced industrial systems, and that computer-based systems and technology has become the cornerstone of the production process, although the methods and technique of production characterized by tremendous technological progress, which led to the need to respond to the continuous and rapid changes in methods and process Uses of administration however, the traditional management accounting methodology, especially in the methods of preparing traditional budgets, did not keep pace with the evolution. Hence, the plans and the executive work change, which requires management accounting and enable them to prepare appropriate plans and control so that there is a link between them and the environment in which they operate, and therefore Activity Based Budgeting emerged to suit the large changes in the business market and as a modern method that avoids the shortcomings in the traditional methods of preparation Budget

4.2 Activity Based Budgeting Definition

Activity-based budgeting (ABB) is not a new idea, early writings on the subject appeared in the late 1990s. This approach was developed by the US-based CAM-I (ABB - the

full name of the ABB-group is the Consortium of Advanced Management–International – Cost Management Systems, Activity-Based Planning and Budgeting Group) which focused its attention on the problems of planning in the traditional budgeting process. They concentrated on the connection between operational planning and financial results, CIMA Official Terminology describes activity-based budgeting (ABB) as a method of budgeting based on an activity framework, using cost driver data in the budget setting and variance feedback processes.

The activity-based budgeting method is an extension of activity-based concepts into the budgeting realm (Hansen, 2011). Also, the development of activity-based costing and management led to an immediate desire to extend the methodology into planning and budgeting (Cooper and Kaplan, 1991).

It was also defined as a financial plan that starts with determining the size of the products and then determining the level of activity required to perform the work for a certain period (Roberts, Muras and Paschall, 2002, p.618)

(Horngren, Harrison and Oliver, 2012, p.846) defined it as a budget based on the cost of activities needed to produce products, goods and services, and)Coller, 2003, p.370) added that it is a budgeting method, which was developed according to the cost and activity basis, the entrance of costs based on the activity, and all the above definitions included:

- Budget is a financial plan expressed in figures and quantities for each product or item
- The budget plan reflects the figures and data expected for a specific period
- The starting point is the last point that traditional budgets have reached
- Budgets are based on the philosophy of activities and are the general criterion for budget performance
- They are allocated to Activity Based Costing and do not include any costs not allocated to specific activities or activities that do not add value to the product.

4.3 The Main Steps to Apply ABB System

To build an Activity-Based Budget for the company's department, four steps are needed:

- the output of the department must be determined;
- the activities needed to deliver the output, along with their related drivers, must be identified;
- the demand for each activity must be estimated; and
- the cost of resources required to produce the relevant activities must be determined.

It is critically important to see that ABB is based on expected output. The traditional budget often plans forward from last years' experience, while the ABB plans backward from next year's output. The differences between the two approaches are more than semantic. While it may appear that the same results would hold in both cases, in practice, that is not so. In addition, the ABB approach, using resources and activities to create output, gives the manager much more information as well as ability to consider eliminating nonvalue-added activities (Hansen, Mowen and Guan, 2007, p.353)

(Hammad, 2005, p.1178) mentioned the stages of the activity-based budgeting process as follows:

1. The activity-based budgeting process (ABB) begins with the client. Established a strategy to meet customer needs.

2. The organization should then forecast the workload, management or sales to decide the future sales levels and managers need to estimate their workloads as a result of these sales levels. Often, sales forecasting involves new services, new markets and any changes in strategy.

3. Managers must be informed of planning guidelines in order to set specific activity-level objectives within the context of a process, and ultimately each activity manager should have the objectives of improving his value-added activities and eliminating non-value-added activities.

4. Projects with different departments should then be identified because these projects will affect the workload as well as activities in the different departments, they must be coordinated and performed before each manager improves his / her activities.

5. At this point in the budget process, projects can be identified for the level of specific activity, which are projects to improve processes at the level of individual activity. However, the improvement should be within the organizational objectives, the context of a business process and the context of customer satisfaction, or investment-based analysis activities from the definition of improvement projects and evaluation of those projects and then the use of committees to select projects that will meet the objectives of the organization and meet the needs of customers.

6. The final step is to report on activities and workload for the coming year. The correct application in the practical framework of activity-based budgeting reflects the results to be achieved from the use of this system,

4.4 The Integration Between ABC, ABM and ABB Systems

(Huynh, Gong and Huynh, 2013 p.185-186) explained the integration between ABM, ABC and ABB systems that the controlling and improving efficiency are the primary objectives of a budget, ABB has many advantages compared with traditional budgeting. However, ABB just emphasizes the planning and control purpose of cost management. ABB lacks in how to manage organization operating to achieve what ABM drew. ABB drawn the target and encourages managers to works toward achieving the organization's goals. How can managers run the actual organization's operating to reach the ABB line? The mangers need ABM help to manage actual judgments in order to get the best way for goals achieving.

When an organization implements the ABC system for costing its products, it needs to construct the management system and budgeting based on activity-based. It is not logical if an organization using ABC calculates product costs, but it is set a management system and budgeting based on traditional methods. However, how can ABB and ABM support each other? How can we integrate ABB and ABM? The following figure presents the integration of ABB and ABM.

The organization uses ABB to evaluate its efficiency and effectiveness. Efficiency is achieved when the business process is performed in the best possible way, with little or no waste. The ABB provides an assessment of the efficiency of a manager, this is because we can compare the actual results with the results-based budgeting activity. Effectiveness means that a manager achieves or exceeds the goals described. Thus, efficiency examines how well the work is done, and

effectiveness examines whether the right work is being accomplished. These perspectives need the function of ABM

In a highly competitive market environment, corporate professionals should use tools and systems that provide reliable information and data for management to make strategic and operational decisions, ensuring that deficiencies that have been addressed or at least attempted to avoid wastage, ABC, ABM and ABB Systems addressed these problems and shortcomings suffered by the old traditional systems that enabled the production of such useful information in the case of continuous change in the working environment, It has also focused on indirect costs and gives it attention to what has an impact on the profitability of the company and must be taken into account when making important decisions of the company such as pricing decisions or adding a new product line or investment in a particular product, on the other hand Traditional systems have focused on total costs, including fixed and variable costs , Unlike activity-based systems that focus on a basic concept of activity, fixed costs have disappeared and all costs became variable costs that add value to the product or service. (Azadvar, Alizadeh and Bozorgmehrian, 2012, p.1391)

By combining the systems described above, we will be able to avoid the shortcomings and constraints facing each system separately, as it was recognized that when applying the ABC system alone we find that it is a diagnostic system and not a treatment system, and its use alone represents half the distance to the solution is not Sufficient for a unit, as well as when the application of the systems ABM and ABB find that these systems derive their basic information from the ABC system and therefore, their application without the application of the Activity-Based Costing will be useless, and cannot benefit from them.

5. Application

This study applied at Crowne Plaza Hotel Amman and the hotel is one of the oldest hotels in the city, which was established in 1989. This hotel is owned by the Jordanian General Organization for Social Security as one of the profitable projects that this institution invests in, this hotel is also managed by IHG It is one of the largest hotel groups as the world, IHG is one of the world's leading hotel companies, with 400,000 colleagues working across more than 100 countries to deliver True Hospitality for everyone, with 5,723 hotels globally and 855,915 Rooms available over the world and the application of the system contend three main steps:

5.1 Identify the Activity and Apply Activity-Based Costing (ABC) System in the Hotel

The system will be applied to one of the hotel's sections, the Health Club will be our point study

5.1.1 Identify Activities

An activity is defined as "a work, effort, task or process that is undertaken and time-consuming, and requires the allocation of some resources.

Resources means "inputs of the necessary cost elements for the implementation of activities within the enterprise" can be determined by a very large number of required activities to produce a particular product, but an increase in the number of activities increases the complexity and the difficulty of the

relationship between the activity and the product, which raises the cost of implementing the system. Therefore, in determining the activities, it is preferable to prepare lists showing the activity and tasks related to this activity, and the movement of flows between the activity and other activities. Through the study of the reality of the hotel we have found that there are six products and services consuming activities and summarized in the following figure:

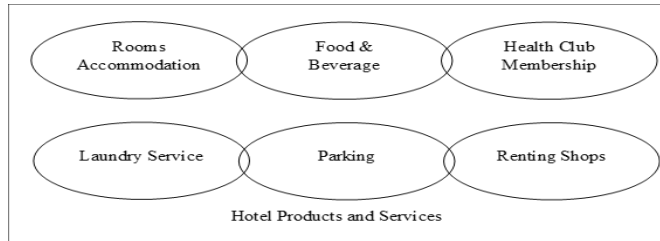


Figure 8: Hotel Products and Services

Health Club Activities are shown in the following table

Table 1: Health Club Activities

Activity Number	Activities
051A	Labor Reception Activity
052A	Sales & Marketing Activity
053A	Purchase Orders Activity
054A	Maintenance Activity
056A	Human Resources & Training Activities
057A	Laundry Activity
058A	Accounting Activity
059A	Staff Canteen Activity
060A	Administrative Activity
061A	Utility Activity- Energy consumption

062A	Security Activity
063A	Management consumption in F&B section
064A	IT Activity
065A	Valet Activity
066A	Call Center Services Activity

5.1.2 The Cost Pool for Health Club

The health club section includes several services that will attract customers to come to the hotel from other hotels, the number of customers who use the health club is the main factor to increase income, the costs of this section are detailed below:

Table 2: Health Club Department Activities Cost

Activity Number	Activity Name	Cost driver	Cost Related Activity
052A	Sales & Marketing	Number of contracts	JOD 557.43
054A	Maintenance	Number of orders done by the team	JOD 5,350.54
056A	Human Resources and Training	Number of Employees Present in These Departments	JOD 577.07
057A	Laundry Service	Usage in kg	JOD 3,167.30

058A	Accounting Service	Number of Accounting Record Related to Each Department	JOD 740.07
059A	Staff Canteen	Number of Employees Working for Each Department	JOD 1,038.91
060A	General Management Share	The contribution rate of income for each department	JOD 562.13
061A	Energy Consumption	Based on Department Area	JOD 13,031.3
062A	Security Service	Number of Guests Who Visited Each Department	JOD 857.36
064A	IT Service	Total Number of Technological Devices	JOD 1,078.66
065A	Call Center Service	Total Number of Calls	JOD 313.58
066A	Car Valet Service	Number of Guests Who Visited Each Department	JOD 312.21
051A	Reception Labor Activity	Average Employees Salary	JOD 7,206.00
053A	Purchase Orders Activity	Cost of Purchase	JOD 1,731.00
063A	Management consumption in F&B	Team Usage in Restaurant	JOD 77.05
Total Cost			JOD 36,600.6
Number of Guests			5000
Cost of Guest			JOD 7.32

5.2 Apply Activity-Based Management (ABM) System in The Hotel

The Activity-Based Management system using the Activity Based Costing data as an input in order to improve the added value activity and eliminate the non-value-added activity, this will lead to increase the profitability of the company and provide products with high value added to the customer, also it is a tool designed to help managers improve the performance of operations and to reduce costs by analyzing activities, and to help managers to develop more accurate methods to determine the cost of products and the implementation of the system in the hotel goes through the following basic stages and the following figure illustrates it:

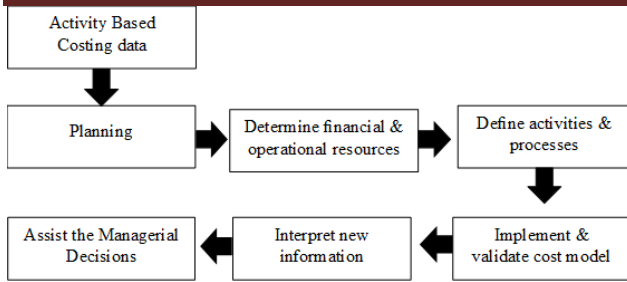


Figure 9: ABM Implementation Mechanical

5.2.1 Planning the Project

We will start from where the Activity Based Costing system ended which provided full cost information, the planning stage it will create an organizational structure to analyze the data outside of the Activity Based Costing system, so the outcoming information will be ready for decision-makers to help them to achieve the overall objectives of the hotel

5.2.2 Identify Financial and Operational Resources and Activities that Consume These Resources

The Health Club department uses the main financial and operational resources to the various activities to provide the services in the health club and swimming pool and the cost of these activities of costs were as follows:

Table 3: The Activities Utilization for the Financial and Operational Resources in the Health Club department

Activity Name	Direct labor	Direct Materials	MOH	Total Activity Cost
Sales & Marketing	JOD 539.44	JOD 2.07	JOD 15.92	JOD 557.43
	96.77%	0.37%	2.86%	1.52%
Maintenance	JOD 1,686.0	JOD 3,655.13	JOD 9.39	JOD 5,350.54
	31.51%	68.31%	0.18%	14.62%
H.R and Training	JOD 470.47	JOD 100.91	JOD 5.68	JOD 577.07
	81.53%	17.49%	0.98%	1.58%
Laundry Service	JOD 1,290.1	JOD 1,055.61	JOD 821.08	JOD 3,167.30
	40.75%	33.33%	25.92%	8.65%
Accounting Service	JOD 721.82	JOD 11.14	JOD 7.11	JOD 740.07
	97.53%	1.51%	0.96%	2.02%
Staff Canteen	JOD 187.90	JOD 849.65	JOD 1.36	JOD 1,038.91
	18.09%	81.78%	0.13%	2.84%
General Management Share	JOD 549.09	JOD 0.76	JOD 12.28	JOD 562.13
	97.68%	0.13%	2.19%	1.54%
Utilities-Energy Consumption	JOD 135.99	JOD 12,894.34	JOD 1.02	JOD 13,031.5
	1.04%	98.95%	0.01%	35.60%
Security Service	JOD 828.89	JOD -	JOD 28.47	JOD 857.36
	96.68%	0.00%	3.32%	2.34%

IT Service	JOD 167.32	JOD 909.45	JOD 1.89	JOD 1,078.66
	15.51%	84.31%	0.18%	2.95%
Call Center Service	JOD 312.39	JOD -	JOD 1.19	JOD 313.58
	99.62%	0.00%	0.38%	0.86%
Car Valet Service	JOD 311.15	JOD -	JOD 1.06	JOD 312.21
	99.66%	0.00%	0.34%	0.85%
Reception Labor Activity	JOD 7,206.0	JOD -	JOD 28.47	JOD 7,206.00
	100.0%	0.00%	0.40%	19.69%
Purchase Orders Activity	JOD -	JOD 1,731.00	JOD -	JOD 1,731.00
	0.00%	100.00%	0.00%	4.73%
Management consumption in F&B	JOD -	JOD -	JOD 77.05	JOD 77.05
	0.00%	0.00%	100.0%	0.21%
Total Cost	JOD 14,407	JOD 21,210.06	JOD 1,011.6	JOD 36,600.6
	39.36%	57.95%	2.76%	100.00%

The following activities represent more than 78% of the total costs of the Health Club department through tracked and analyzed those activities that can directly affect the cost for the department. These activities are:

- The maintenance activity (054A) is one of the activities that must be followed with caution due to the presence of large labor costs and the costs of different equipment and raw materials, this activity constituted a very large percentage of the costs of the section by 14.62% and compared to this ratio with the proportion of the hotel sector, we find somewhat high
- The laundry activity (057A), 8.65% seems to be one of the biggest costs for the health club because of the multiple use of materials that need to be washed on a daily basis it seems possible to track and reduce the number of kilograms to be washed in a way that does not reduce the quality of service provided to the customer
- The activity of energy consumption (061A) represents 35.60% of the costs of the activities of the department in a way that forces officials to consider alternative energy allowance and carefully choose the systems operating energy and rationalize its consumption and get rid of wasted use.
- The Direct Labor Activates (051A) represents about 19.69% of the total cost of the Health Club department, this activities is one of the activities that add value to the customer and must, therefore, take full advantage of this activities also enter under the presence of cost tracking this activities and reduce the sub-activities that do not add value to this activities

Health Club department accounted for 8.91% of the total hotel costs. The bulk of these costs were workers' wages and materials costs. The following table summarizes these costs.

Table 4: The Distribution of the Costs of the Health Club department of the Total Hotel Costs

Description	Total cost	Of full hotel cost
Health Club department	JOD 36,600.66	8.91%
Direct labor	JOD 14,407.10	3.5%
Direct Materials	JOD 21,210.06	5.2%

Manufacturing overhead	JOD	1,011.96	0.2%
Hotel Costs	JOD	410,894.09	

While referring to sales for this section and comparing them with the actual costs for the same month, we find the following

Table 5: Sales, Cost and Profit Performance for the Health Club department from the Full Hotel Amounts

Description	Amount	Full Amount	Performance
Total Cost	JOD 36,600.66	JOD 410,894.09	8.91%
Total Sales	JOD 69,205.11	JOD 779,941.21	8.9%
Profit Performance	JOD 32,604.45	JOD 369,047.12	8.8%

Back to the previous facts and with sales volume 5000 visit for this month we find the following regarding the room’s division

Table 6: Health Club department Performance

Ratio	Description	Result
Gross profit	Total Health Club sales - Total Health Club cost	JOD 32,604.45
Gross profit margin	(Gross profit / Total Health Club sales) * 100%	47%
Price per visit sold	Total Health Club sales / sales volume	JOD 13.84
Direct material cost per visit	Total materials cost / sales volume	JOD 4.24
Direct labor cost per visit	Total labor cost / sales volume	JOD 2.88
Overhead cost per visit	Total overhead cost / sales volume	JOD 0.20

5.3 Apply Activity Based Budgeting (ABB) System in the Hotel

Activity Based Budgeting is also used the Activity Based Costing data based on the philosophy of activities and are the general criterion for budget performance, they are allocated to Activity Based Costing and do not include any costs not allocated to specific activities or activities that do not add value to the product, it’s a financial plan that starts with determining the size of the products and then determining the level of activity required to perform the work for a certain period, the implementation of the AB system in the Crowne Plaza Hotel will be sequenced within several key steps to ensure its implementation error-free, the following figure shows the steps to implement the system:

5.3.1 Going through the above-mentioned stages, the total value of the products and services quantities obtained and the estimated sales volume for each department and services for September 2019 for Crowne plaza Amman is shown as follows:

Table 7: The Estimated Sales Volume for Health Club Department

Services or Departments	Sales Volume	Units Price	Total Sales
Health Club Department	3,500 Visitor	JOD 10.50	JOD 36,750.00

5.3.2 Then comes the role of building the organizational structure of the different activities of each department and serve it individually; the activities required to produce

service and products in different departments were as follows:

Table 8: Health Club Department Activities Structure

Main activities	Type of expense and specific cost inductor
052A Sales & Marketing	052A Sales & Marketing Cost Driver (Number of contracts)
056A Human Resources and Training	056A Human Resources and Training Cost Driver (Number of Employees Present in These Departments)
054A Maintenance	054A Maintenance Cost Driver (Number of orders done by the team)
057A Laundry Service	057A Laundry Service Cost Driver (Usage in kg)
058A Accounting Service	058A Accounting Service Cost Driver (Number of Accounting Record Related to Each Department)
059A Staff Canteen	059A Staff Canteen Cost Driver (Number of Employees Working for Each Department)
060A General Management Share	060A General Management Share Cost Driver (Contribution rate of income for each department)
061A Utilities-Energy Consumption	061A Utilities-Energy Consumption Cost Driver (consumption of kilowatts hour)
062A Security Service	062A Security Service Cost Driver (Number of Guests Who Visited Each Department)
064A IT Service	064A IT Service Cost Driver (Numbers of Technological Devices)
065A Call Center Service	065A Call Center Service Cost Driver (Total Number of Calls)
066A Car Valet Service	066A Car Valet Service Cost Driver (Number of Guests Who Visited Each Department)
051A Reception Labor Activity	051A Reception Labor Activity Cost Driver (Employee’s Salary)
053A Purchase Orders Activity	053A Purchase Orders Activity Cost Driver (Cost of Purchase)
063A Management consumption in F&B	063A Management consumption in F&B Cost Driver (Team Usage in Restaurant)

- 5.3.3** The two systems work together in the process of preparing the base on which the ABB system works:
- Use the ABM system ratios if there is a change in needs of resources with the sales
 - Back to ABC outputs if there is the stability of volume of resources with a change in sales volume

5.3.4 After Identify the types and quantities of resources needed in order to perform the hotel activities by combining the total fixed activities cost expected by using ABM and total variable activities cost that’s depending ABC, Health Club Department by expecting the sales volume 3,500 Visitor, according to membership selling an expected guest in house this volume needs the following cost for different activities will have the following result:

Table 9: Total Expected Activities Cost for Health Club Department

Activity Number	Activity Name	Expected Direct labor ABC	Expected Direct Materials ABM %	Expected Overhead ABM Ratio	Total Expected Activity Cost
052A	Sales & Marketing	JOD 285.89	JOD 1.09	JOD 8.45	JOD 295.43
054A	Maintenance	JOD 895.37	JOD 1,941.06	JOD 5.11	JOD 2,841.55
056A	H.R and Training	JOD 250.37	JOD 53.71	JOD 3.01	JOD 307.09

057A	Laundry Service	JOD 685.10	JOD 560.35	JOD 435.77	JOD 1,681.22
058A	Accounting Service	JOD 382.91	JOD 5.93	JOD 3.77	JOD 392.61
059A	Staff Canteen	JOD 99.85	JOD 451.41	JOD 0.72	JOD 551.98
060A	General Management Share	JOD 292.37	JOD 0.39	JOD 6.56	JOD 299.32
061A	Energy Consumption	JOD 71.96	JOD 6,846.58	JOD 0.69	JOD 6,919.24
062A	Security Service	JOD 439.70	-	JOD 15.10	JOD 454.80
064A	IT Service	JOD 88.93	JOD 483.40	JOD 1.03	JOD 573.36
065A	Call Center Service	JOD 166.51	-	JOD 0.64	JOD 167.15
066A	Valet Service	JOD 164.64	-	JOD 0.56	JOD 165.21
051A	Reception Labor Activity	JOD 3,826.96	-	JOD 15.31	JOD 3,826.96
053A	Purchase Orders Activity	-	JOD 919.33	-	JOD 919.33
063A	Management consumption in F&B	-	-	JOD 40.82	JOD 40.82
Total Expected Activities Cost					JOD 19,436.05

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Author Profile

Meshal ALSORKHEE received the B.S. degrees in Accounting and M.S. degrees in Business Administration from Applied since Privet University in 2014 and Istanbul Aydin University in 2019, respectively. During 2011-2019, he worked for Crowne Plaza and Marriott Amman as Night Auditor and Accountant. After that, he worked for a logistics company at DUBAI FREE ZONE as Chief Accountant and for the largest life support company IN JORDAN as a Senior Project Accountant and now run his own company at Istanbul-Turkey.