

# The Application of Time-Driven Activity-Based Costing In the Hospitality Industry: An Exploratory Case Study

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## Abstract

*In managing a company, the management and the board need accurate information about operational cost structures and profitability in order to help them in the decision making processes. To provide accurate information, a cost calculation system is generally used to show how the company has allocated its resources to supply its products/services.*

*This paper looks at the application of Time Driven Activity-Based Costing (TDABC) in a service company. The cost object of this research is a Hotel and the Room Division that is the main source of the hotel's revenue. Approximately 80% of the hotel's revenue comes from room rent activity.*

*Both direct and indirect costs are recalculated using the TDABC method. The results from the TDABC are then compared to the results from the initial cost calculation method used by the company. This research shows that the TDABC method is applicable for Hotel services costing and also that the capacity cost rate can be more accurately and flexibly used in cost compilation.*

## Keywords

**Time Driven ABC (TDABC)  
Service Industry Costing  
Case Study  
Capacity Cost Rate  
Cost Driver Rate  
Time Equations**

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## Introduction

In recent years, human mobility has increased dramatically, especially those visiting big cities; whether it is for a business trip or just a holiday. This phenomenon has resulted in businessman developing hotels, motels, home stays, etc., to cater for the need for accommodation in those popular cities.

Such hotel developments have had a positive trend year to year especially in Malang, East Java; a popular tourism destination in Indonesia. Due to increasing competition, hotels need to run their operational activities both efficiently and effectively. Therefore, hotels need to consider all of the costs, both direct and indirect cost, and then recoup them via the services provided. Incorrect cost calculations may result in the occurrence of overpricing or underpricing which will later affect the hotel competitiveness and profitability. Nowadays, many hotels are not only offering accommodation services, but also offering restaurants, laundry services, halls or ballroom rentals, etc. This research study chose to concentrate on cost calculations only in a case study hotel's room division. The reason for choosing the room division is based on the fact that the room division provided the dominant portion of revenues in the case study hotel, Hotel Graha Cakra; i.e. almost 80% of the hotel's total revenue of comes from room division revenue.

The current cost calculation method used by the Hotel is a very simple traditional costing method. More modern cost allocation approaches such as, Activity Based Costing (ABC) have been shown to be more effective and accurate than the traditional methods in both manufacturing and service organisations. However, difficulties of implementing ABC systems has resulted in the development of a new approach to ABC by Kaplan and Anderson (2007) called *Time-Driven Activity-Based Costing (TDABC)*.

## Theoretical Framework

TDABC was designed to eliminate the problems in ABC systems implementation and operations. As stated by Kaplan and Anderson (2007) this new approach was developed after the following problems with conventional

ABC were identified: (1) the interviewing and surveying process was time consuming and costly; (2) the data for the ABC models were subjective and difficult to validate; (3) the data was expensive to store, process and report; (4) most ABC models were local and did not provide an integrated view of enterprise-wide profitability opportunities; (5) the ABC model could not be easily updated to accommodate changing circumstances; and (6) the model was theoretically incorrect when it ignored potential for unused capacity.<sup>1</sup>

Kaplan and Anderson (2007) stated that “ABC systems were expensive to build, complex to sustain, and difficult to modify” and therefore they made ABC’s shortcomings as TDABC’s primary strengths. Furthermore, they state that “... It is simpler, cheaper, and far more powerful than the conventional ABC approach”. According to Kaplan and Anderson (2007), TDABC approach overcomes many ABC difficulties and has the following advantages:

1. Easier and faster to build an accurate model.
2. Integrates well with data now available from ERP and customer relationship management systems (this makes the system more dynamic and less people-intensive).
3. Drives costs to transactions and orders using specific characteristics of particular orders, processes, suppliers, and customers.
4. Can be run monthly to capture the economics of the most recent operations.
5. Provides visibility to process efficiencies and capacity utilization.
6. Forecasts resource demands, allowing companies to budget for resource capacity on the basis of predicted order quantities and complexity.
7. Is easily scalable to enterprise wide models via enterprise-scalable applications software and database technologies.

<sup>1</sup> There are many academic papers that refute the claims made by Kaplan and Anderson (2007) about the problems of ABC. Ratnatunga, Tse and Balachandran (2012) state that TDABC time allocations are even more subjective than ABC; and have shown via a case study that TDABC is theoretically inferior to ABC.

8. Enables fast and inexpensive model maintenance.
9. Supplies granular information to assist users with identifying the root cause of problems.
10. Can be used in any industry or company with complexity in customers, products, channels, segments, and processes and large amounts of people and capital expenditures.

Despite some possible theoretical inferiority; it is correct that TDABC implementation is much simpler than ABC in that it requires only two parameters, the *unit cost of activity* and the *time required to perform a transaction or an activity*. As such, TDABC is very suitable for a service company such as a hotel, because hotel activities are primarily measured on the basis of labour time used for performing a given activity, or have high portion of overhead cost. The use of traditional cost system to determine the rooms selling price not only causes inflexibility; but also many people argue overcome the subjectivity in their cost driver selections. Also, often the price cannot reflect the changing circumstances. Hopefully by using TDABC, the cost calculations can be more precise and also more flexible with the changing environmental circumstances.

Kaplan and Anderson (2007) outline the two steps in implementation this system as follows:

*“First, it calculates the costs of supplying resource capacity . . . it divides this total cost by the capacity of the department to obtain the capacity of the department to obtain the capacity cost rate. Second, TDABC uses the capacity cost rate to drive departmental resource costs to cost objects by estimating the demand for resource capacity (typically time, from which the name of the new approach was chosen) that each cost object requires.”*

The essential components of TDABC in its implementation stage are namely (Kaplan and Anderson 2007):

1. Define activities, activity costs pools and activity measures.

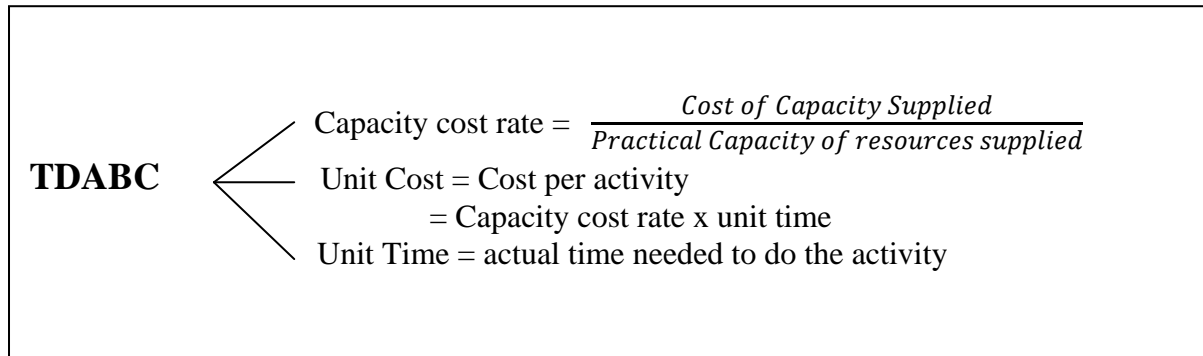
2. Define Cost of Capacity Supplied
3. Define Practical Capacity
4. Determine Capacity Cost Rate
5. Estimate Time Consumption

If a process does not have too much activity variation, TDABC can be conducted easily, and vice versa, if a

process has a high variety of activity, then the determination of accurate practical capacity can be quite complicated.

To solve this problem TDABC builds the time equations as shown in Figure 1 (source: Kaplan and Anderson. 2007, modified).

**Figure 1: Key Components of TDABC**



Such time driven equations help companies to better identify the actual time required to perform the process. The key elements to create time equations are: (1) estimate standard time required to perform the process, and (2) add the factors that increase standard time process time required to perform an activity as follows: “*Standard time + additional time {if (certain condition)} + additional time {if (certain condition)} + additional time {if (certain condition)} + . . . .*”

## Research Outline

This paper hopefully will contribute to the managerial accounting literature by demonstrating how a new costing model (TDABC) is suitable for certain types of services such as found in the hospitality industry. The paper will discuss the research method used, the initial calculation of room cost, the detailed calculation of room cost using TDABC, and a comparison between the two models. The paper will demonstrate how the Time-Driven Activity-Based Costing method at Hotel Graha Cakra, Malang, produces better cost information for decision making than the traditional costing approach used by the hotel.

The research approach used is a non mainstream methodology using an exploratory case study. The data collection procedures are as follows:

**Preliminary survey:** The researcher conducted a preliminary survey to gain an understanding of the company and to find out information about the existing cost system that was used by company. The purpose of this survey was to ascertain the current condition of the company and the associated problem formulation.

**Field research:** This phase was directly conducted in the research site by using several techniques, such as:

- **Observation:** Observations were made to collect data as evidence useful to provide additional information. Observations were made by visiting the Hotel regularly.
- **Interview:** Data was collected from the interviews with responsible parties, such as the general manager of the hotel, operational manager, and administration. These interviews were very useful for the researchers to gain an understanding about the company and the application of company’s existing cost system.

**Documentation:** Research was carried out by collecting internal company documents;

including the data on the organisational structure of the company, lists of the company direct and indirect expense, and the company's facilities. This data was used as the basis for the cost calculations.

In the field research and documentation stages data was collected and analysed for the following resource costs:

- Room Data (Table 1)
- Room Inventory (Table 2)
- Direct Human Resources (Rent Rooms Service) (Table 3)
- Indirect Human resources (Rent Rooms Service) (Table 4)
- Fixed Assets in Room Type: Superior (Table 5)
- Fixed Assets in Room Type: Deluxe (Table 6)
- Fixed Assets in Room Type: Junior Suite (Table 7)
- Fixed Assets in Room Type: Royal Suite (Table 8)
- Overhead Costs – Electricity (Table 9)
- Overhead Costs – Water (Table 10)

**Table 1: Room Data**

No.	Room Type	Size	Quantity	Facility and Furniture
1.	Superior	22 m <sup>2</sup>	26	Beds, Tables, Chair, suitcase rack, wardrobe, telephone, 2 ACs, Television with satellite channels, mini refrigerator, pictures, electric kettle, shower, closet, washbasin, mirrors, lamps, electric fan
2.	Deluxe	28 m <sup>2</sup>	18	Bed, Tables, chair, sofa, cupboard, suitcase rack, wardrobe, telephone, 2 ACs, Television with satellite channels, picture, electric kettle, mini refrigerator, mirrors, shower, closet, washbasin, lamps
3.	Junior Suite	30 m <sup>2</sup>	5	Bed, Tables, Chair, Rattan sofa with pillow, sofas (mini living room), mini bar table, glass hanged cupboard, suitcase rack, cupboard, wardrobe, lamps, 2 telephones, 2 ACs, Television with satellite channels, picture, electric kettle, bathtub, shower, closet, washbasin, mirror, mini refrigerator
4.	Royal Suite	40 m <sup>2</sup>	3	Antique Bed, sofa, cravings, pictures, lamps, tables, chairs, cupboards, mini refrigerators, wardrobe, 1 set of antique table and chairs, Rattan sofa with pillow, mini bar, glass hanged cupboard, suitcase rack, 3 telephones, 3 ACs, 2 Televisions with satellite channels, electric kettle, bathtub, shower, closet, washbasin, mirrors, carpet, antique shelf, decorated plant, hairdryer, aromatherapy candles

*Source: Hotel Graha Cakra data, modified by Researchers*

**Table 2: Room Inventory**

No.	Inventory	Quantity	Purchasing Price (IDR)	Total (IDR)
1.	Sandal	75,920 pairs	5,000/pair	379,600,000
2.	Paper	200 rims	45,000/rim	9,000,000
3.	Pen	40,150	1,000	40,150,000
4.	Soap	56,940	2,000	113,880,000
5.	Shampoo	56,940	2,000	113,880,000
6.	Shower Cap	56,940	1,000	56,940,000
7.	Toothbrush	56,940	3,000	170,820,000
8.	Toothpaste	56,940	1,500	85,410,000
9.	Comb	56,940	1,500	85,410,000
10.	Mineral Water	5,475 boxes	28,000/box	153,300,000
11.	Tea sachet	113,880	1,000	113,880,000
12.	Coffee sachet	113,880	1,000	113,880,000
13.	Sugar	151,840	1,000	151,840,000
14.	Creamer	113,880	1,000	113,880,000
15.	Tissue	43,800	4,500	197,100,000
16.	File Holder	30,000	1,000	30,000,000
17.	Newspaper	18,980	3,000	56,940,000
<b>TOTAL</b>				<b>1,872,030,000</b>

*Source: Hotel Graha Cakra data, processed by Researchers*

**Table 3: Direct Human resources (Rent Rooms Service)**

No	Position	Qty	Salary (per month)	Grant		Take Home Pay (per month per person)	TOTAL (per year)
				Position	THR (Eid Allowance)		
1.	House Keeping Manager	1	4,000,000	500,000	4,500,000	4,500,000	58,500,000
2.	House Keeping Supervisor	1	2,500,000	350,000	2,850,000	2,850,000	37,050,000
3.	Room boy, Room maid	8	1,500,000	-	1,500,000	1,500,000	156,000,000
4.	Laundry (administration and laundry man)	4	1,500,000	-	1,500,000	1,500,000	78,000,000
5.	Houseman	4	1,500,000	-	1,500,000	1,500,000	78,000,000
<b>TOTAL</b>							<b>407,550,000</b>
Position Grant paid monthly, it added the amount of monthly Take Home Pay THR Grant paid once a year Total per year is result after multiplication process with the quantity of employee for each position							

*Source: Hotel Graha Cakra Data, modified by Researchers*

**Table 4: Indirect Human Resources (Rent Rooms Service)**

No	Position	Qty	Salary (per month)	Grant		Take Home Pay (per month per person)	TOTAL (per year)
				Position	THR (Eid Allowance)		
1.	General Manager	1	10,000,000	-	10,000,000	10,000,000	130,000,000
2.	Front Office Manager	1	4,000,000	500,000	4,500,000	4,500,000	58,500,000
3.	Front Office Coordinator	1	2,500,000	350,000	2,850,000	2,850,000	37,050,000
4.	Receptionist	4	1,600,000	-	1,600,000	1,600,000	83,200,000
5.	Bell boy	3	1,500,000	-	1,500,000	1,500,000	58,500,000
6.	Front Office cashier	2	1,700,000	-	1,700,000	1,700,000	44,200,000
<b>TOTAL</b>							411,450,000
Position Grant paid monthly, it added the amount of monthly Take Home Pay							
THR Grant pay once a year							
Total per year is result after multiplication process with the quantity of employee for each position							
<i>Source: Hotel Graha Cakra Data, modified by Researchers</i>							

**Table 5: Fixed Assets in Room Type: SUPERIOR**

No	Fix Asset	Qty	Year of Acqui- sition	Acquisiti- on Cost (IDR)	Econ- omic Year	Depre- ciation Expense (IDR/year)	Depre- ciation Expense 2011 (IDR)	Last Book Value (IDR)
1.	Bed	2	2002	1,500,000	4	750,000	-	2
2.	Table	3	2002	750,000	4	562,500	-	3
3.	Chair	1	2002	750,000	4	187,500	-	1
4.	Suitcase rack	1	2002	350,000	4	87,500	-	1
5.	Wardrobe	1	2002	850,000	4	212,500	-	1
6.	Telephone	1	2003	150,000	4	37,500	-	1
7.	Air Conditioner	1	2004	2,500,000	8	312,500	312,500	312,500
8.	Electric Fan	1	2003	400,000	8	50,000	-	1
9.	Television	1	2004	1,500,000	4	375,000	-	1
10.	Mini refrigerator	1	2002	6,800,000	4	1,700,000	-	1
11.	Electric Kettle	1	2010	150,000	4	37,500	37,500	70,000
12.	Shower	1	2004	550,000	16	34,475	34,475	275,800
13.	Closet	1	2004	1,000,000	16	62,500	62,500	500,000
14.	Washbasin	1	2004	1,500,000	16	93,750	93,750	750,000
<b>TOTAL DEPRECIATION EXPENSE</b>						4,503,225	540,725	1,908,312
<i>Straight Line Depreciation method</i>								
<i>Source: Company internal data processed</i>								

**Table 6: Fixed Assets in Room Type: DELUXE**

No	Fix Asset	Qty	Year of Acquisition	Acquisition Cost (IDR)	Economic Year	Depreciation Expense (IDR/year)	Depreciation Expense 2011 (IDR)	Last Book Value (IDR)
1.	Bed	1	2002	2,500,000	4	625,000	-	1
2.	Table	2	2002	750,000	4	375,000	-	2
3.	Chair	1	2002	750,000	4	187,500	-	1
4.	Sofa	1	2002	800,000	4	200,000	-	1
5.	Cupboard	1	2002	850,000	4	212,500	-	1
6.	Suitcase rack	1	2002	350,000	4	87,500	-	1
7.	Wardrobe	1	2002	850,000	4	212,500	-	1
8.	Telephone	1	2003	150,000	4	37,500	-	1
9.	Air Conditioner	1	2004	2,500,000	8	312,500	312,500	312,500
10.	Television	1	2004	1,500,000	4	375,000	-	1
11.	Mini refrigerator	1	2002	6,800,000	4	1,700,000	-	1
12.	Electric Kettle	1	2010	150,000	4	37,500	37,500	70,000
13.	Shower	1	2004	550,000	16	34,475	34,475	275,800
14.	Washbasin	1	2004	1,500,000	16	93,750	93,750	750,000
15.	Closet	1	2004	1,000,000	16	62,500	62,500	500,000
<b>TOTAL DEPRECIATION EXPENSE</b>						4,553,225	540,725	1,908,311
<i>Straight Line Depreciation method</i>								
<i>Source: Company internal data processed</i>								

**Table 7: Fixed Assets in Room Type: JUNIOR SUITE**

No	Fix Asset	Qty	Year of Acquisition	Acquisition Cost (IDR)	Economic Year	Depreciation Expense (IDR/year)	Depreciation Expense 2011 (IDR)	Last Book Value
1.	Bed	1	2002	2,500,000	4	625,000	-	1
2.	Table	3	2002	750,000	4	562,500	-	3
3.	Chair	1	2002	750,000	4	187,500	-	1
4.	Sofa	2	2002	3,500,000	4	1,750,000	-	2
5.	Rattan Sofa	1	2002	750,000	4	187,500	-	1
6.	mini bar table	1	2002	750,000	4	187,500	-	1
7.	Glass hanged cupboard	1	2002	1,500,000	4	375,000	-	1
8.	Cupboard	1	2002	850,000	4	212,500	-	1
9.	Suitcase rack	1	2002	350,000	4	87,500	-	1

No	Fix Asset	Qty	Year of Acquisition	Acquisition Cost (IDR)	Economic Year	Depreciation Expense (IDR/year)	Depreciation Expense 2011 (IDR)	Last Book Value
10.	Wardrobe	1	2002	850,000	4	212,500	-	1
11.	Telephone	2	2003	150,000	4	75,000	-	2
12.	Air Conditioner	1	2004	2,500,000	8	312,500	312,500	312,500
13.	Television	1	2004	1,500,000	4	375,000	-	1
14.	Mini refrigerator	1	2002	6,800,000	4	1,700,000	-	1
15.	Electric kettle	1	2010	150,000	4	37,500	37,500	70,000
16.	Bathtub	1	2004	2,000,000	16	125,000	125,000	1,000,000
17.	Shower	1	2004	550,000	16	34,475	34,475	275,800
18.	Washbasin	1	2004	1,500,000	16	93,750	93,750	750,000
19.	Closet	1	2004	1,000,000	16	62,500	62,500	500,000
<b>TOTAL DEPRECIATION EXPENSE</b>						7,203,225	665,725	2,908,317
<i>Straight Line Depreciation method</i>								
<i>Source: Company internal data processed</i>								

**Table 8: Fixed Assets in Room Type: ROYAL SUITE**

No	Fix Asset	Qty	Year of Acquisition	Acquisition Cost (IDR)	Economic Year	Depreciation Expense (IDR/year)	Depreciation Expense 2011 (IDR)	Last Book Value
1.	Antique Bed	1	1997	15,000,000	4	3,750,000	-	1
2.	Antique Table	1	1997	10,000,000	4	2,500,000	-	1
3.	Antique Chair	1	1997	8,000,000	4	2,000,000	-	1
4.	Antique Shelf	1	1997	8,000,000	4	2,000,000	-	1
5.	Sofa	1	2002	8,000,000	4	2,000,000	-	1
6.	Rattan Sofa	1	2002	750,000	4	187,500	-	1
7.	mini bar table	1	2002	750,000	4	187,500	-	1
8.	Mini refrigerator	1	2002	6,800,000	4	1,700,000	-	1
9.	Glass hanged cupboard	1	2002	1,500,000	4	375,000	-	1
10.	Cupboard	1	2002	850,000	4	212,500	-	1
11.	Wardrobe	1	2002	850,000	4	212,500	-	1
12.	Tables	3	2002	750,000	4	562,500	-	3
13.	Chairs	2	2002	750,000	4	375,000	-	2
14.	Suitcase rack	1	2002	350,000	4	87,500	-	1



No	Fix Asset	Qty	Year of Acquisition	Acquisition Cost (IDR)	Economic Year	Depreciation Expense (IDR/year)	Depreciation Expense 2011 (IDR)	Last Book Value
15.	Telephone	3	2003	150,000	4	112,500	-	3
16.	Air Conditioner	2	2004	2,500,000	8	625,000	625,000	625,000
17.	Television	1	2004	1,500,000	4	375,000	-	1
18.	LCD-Television	1	2010	8,000,000	4	2,000,000	2,000,000	4,000,000
19.	Electric Kettle	1	2010	150,000	4	37,500	37,500	70,000
20.	Hairdryer	1	2010	150,000	4	37,500	37,500	70,000
21.	Bathtub	1	2004	2,000,000	16	125,000	125,000	1,000,000
22.	Shower	1	2004	550,000	16	34,475	34,475	275,800
23.	Washbasin	1	2004	1,500,000	16	93,750	93,750	750,000
24.	Closet	1	2004	1,000,000	16	62,500	62,500	500,000
<b>TOTAL DEPRECIATION EXPENSE</b>						19,653,225	3,015,725	7,290,821
<i>Straight Line Depreciation method</i>								
<i>Source: Company internal data processed</i>								

**Table 9: Overhead Costs – Electricity**

No	Room Type	Room Size	Number of room sold	Comparison calculation	Calculation of Expense Allocation	Electricity Expense per unit sold (IDR)
1.	Superior	22 m <sup>2</sup>	4,271	93,962 m <sup>2</sup>	{(93,962/192,104) x Rp540,000,000} / 4,271	61,841.5
2.	Deluxe	28 m <sup>2</sup>	2,424	67,872 m <sup>2</sup>	{(67,872/192,104) x Rp540,000,000} / 2,424	78,707.37
3.	Junior Suite	30 m <sup>2</sup>	517	15,510 m <sup>2</sup>	{(15,510/192,104) x Rp540,000,000} / 517	84,329.32
4.	Royal Suite	40 m <sup>2</sup>	369	14,760 m <sup>2</sup>	{(14,760/192,104) x Rp540,000,000} / 369	112,439.1
<b>TOTAL</b>			7,580	192,104 m <sup>2</sup>	<i>Source: Company internal data processed</i>	

**Table 10: Overhead Costs – Water**

No	Room Type	Room Size	Number of room sold	Comparison calculation	Calculation of Expense Allocation	Water Expense per unit sold (IDR)
1.	Superior	22 m <sup>2</sup>	4,271	93,962 m <sup>2</sup>	{(93,962/192,104) x Rp216,000,000} / 4,271	24,736.6
2.	Deluxe	28 m <sup>2</sup>	2,424	67,872 m <sup>2</sup>	{(67,872/192,104) x Rp216,000,000} / 2,424	31,482.95
3.	Junior Suite	30 m <sup>2</sup>	517	15,510 m <sup>2</sup>	{(15,510/192,104) x Rp216,000,000} / 517	33,731.73
4.	Royal Suite	40 m <sup>2</sup>	369	14,760 m <sup>2</sup>	{(14,760/192,104) x Rp216,000,000} / 369	44,975.64
<b>TOTAL</b>			7,580	192,104 m <sup>2</sup>	<i>Source: Company internal data processed</i>	

## Results and Discussion

Hotel Graha Cakra is located in a luxurious residential area. The hotel building is a glorious example of the opulence, grandeur and beauty of colonial architecture in the 1930s. Renovation and restoration of the original building began in 1993 with special emphasis on maintaining its original building and its historical value. Hotel Graha Cakra also offers the comfort of the new millennium in the grandeur of the 30's; with also the intimacy of personalised boutique hotel services in the tradition of gracious Indonesian hospitality. Currently, it has become one of the leading 4-star hotels in Malang.

### Initial Cost Calculations

In determining their room cost, the hotel has applied a very basic *Target Pricing* approach in which prices are set at cost plus a rate of return based on turnover; i.e. a room cost calculation is the result of a "turnover target" method which is then adjusted based on competitor pricing of similar rooms in Malang. As such, the traditional calculation formula for room cost at Hotel Graha Cakra is as follows:

Initial Capital or initial total investment:

$$= 67,392,000,000 \text{ IDR}$$

Turnover target = 8 years

Total number of rooms = 52 rooms

Yearly Revenue target:

$$\begin{aligned} &= \frac{\text{Initial Capital or Investment}}{\text{Turnover target}} \\ &= \frac{67,392,000 \text{ IDR}}{8 \text{ years}} \\ &= 8,424,000,000 \text{ IDR / year} \end{aligned}$$

Daily Revenue target:

$$\begin{aligned} &= \frac{\text{Yearly Revenue Target}}{\text{Number of day in one year}} \\ &= \frac{8,424,000,000 \text{ IDR}}{365} \\ &= 23,079,453 \text{ IDR / day} \end{aligned}$$

Room cost:

$$\begin{aligned} &= \frac{\text{Daily revenue target}}{\text{Total Number of Room}} \\ &= \frac{23,079,453 \text{ IDR}}{52 \text{ rooms}} \\ &= 443.836 \text{ IDR / room} \end{aligned}$$

The room cost calculation above becomes the room cost for Superior type and it will be used as a basis for calculating room price for different room types by multiplying this rate with a fixed percentage as follows:

- Deluxe type room cost is 590.302 IDR (i.e. 133% x 443.836 IDR).
- Junior Suite type room cost is 736.768 IDR (i.e. 166% x 443.836 IDR).
- Royal Suite type room cost is 1.176.166 IDR (i.e. 265% x 443.836 IDR).

The determination of the percentage is based on some management assumptions about the differences in facilities in each room, and also considering an average room prices imposed by another hotel in the city of Malang.

### Time-Driven Activity Based Costing (TDABC)

Like the ABC method, TDABC also uses activities as a base. In Hotel Graha Cakra, the labour services given to customers have been standardised. Every customer who rents any type of room will get the same services, i.e. there is no differentiation in activities that must be delivered by an employee whatever the room type.

### Designing TDABC Model

The TDABC model for the Hotel was designed by the researchers as follows:

1. By identifying activities that happen in core unit and the supporting units through a "table of activities". This research is focused on room division department.
2. By identifying the Unit Time for each activity. This step was done through observations of the research object. The

researchers brought along a stopwatch to know the exact time consumed to do the activity.

3. By determining the practical capacity resource used.
4. By defining the Capacity Cost Rate for Indirect Labour.
5. By calculating the TDABC Cost Driver Rate based on the unit time and the calculation of capacity cost rate in each supporting unit.
6. By calculating the TDABC Cost of Performing Activities based on the TDABC cost driver rate with quantities of work for each activity. This step also delivers the information about portion of used and unused capacity.

### ***Table of Activities***

First step in designing the TDABC model is to determine activities. Since this research is focused on the room division, the activities that relate with room rent service are listed on the Table of activities presented in Appendix One. The Table of activities required: (1) activity cost pool as general type of process that consists of detailed activities and (2) related resource of each activity.

### ***Determining the Unit Times***

Unit time is the exact time that needed to do the activity. The researcher observed how much time was needed by employees to accomplish each activity in the Table of activity. In this step, the researchers also make the Time Equations to calculate the total time needed in each cost pool to accomplish their activities. The following time equations were developed:

*Administration-in* (minutes)  
 $= [1 + 1 + 4 \{ \text{if guest came by go show system} \} + 1 \{ \text{if guest came by reservation system} \} + 1 + 2] \times \text{total of room sold during 2011}$

*Greeting* (minutes)  
 $= 5 \times \text{total of room sold during 2011}$

*Accompanying the guest* (minutes)  
 $= 10 \times \text{total of room sold during 2011}$

*Sweeping Dusting Moping (SDM)* (minutes)  
 $= 25 \times \text{total of room sold during 2011}$

*Administration-out* (minutes)  
 $= [6 + 2 + 1 + 1 + 2] \times \text{total of room sold during 2011}$

### ***Determining the Practical Capacity Resource Used***

Having determined the time equations, the next step is to calculate the Practical Capacity Resource Used. Practical Capacity Resource Used is a total of time available for productive work for each supporting unit doing their activities. Calculation for the practical capacity resource used is 1 year and consists of 52 weeks; the working time for an employee of the hotel is 6 days in a week, so the total working time for a year is 312 days (52 x 6 days) excluding national holidays.

Furthermore, we can calculate the total employee working time in a year as 2,496 hours or 149,760 minutes. However, it is clear that not all of an employee's working time is used to as 'productive' work in servicing the rooms division. There is time used for rest and training. Assuming that such 'unproductive' work time is a time break to eat for 1 hour/day; then the total time to take a rest is 312 hours or 18,720 minutes (312 x 60 minutes). Another 'unproductive work time' in relation to Room Division activities is the training for employees that is held once a year for 2 hours, so that the total time for training activity is 120 minutes per employee. These calculations are provided in Appendix Two.

### ***Determining the Capacity Cost Rates***

After we determine the practical capacity resource used, the next step is to calculate the Capacity cost rate in indirect labour for each type of room. The formula to calculate the capacity cost rate is to divide the total cost with the practical capacity resource used. The calculation of capacity cost rate will result on a "cost portion" for every minute assigned. Further it also can be used to determine the unit cost which is the most important part in this TDABC method. It has also already been explained previously that the hotel has 4 types of rooms and there is no segregation of duties as to which employee works in which rooms. So, to know the exact "work portion" in which employees are assigned to which room, the researchers used an assumption that the more luxurious the type of room that is sold, the

more time is spent by employee for that type of room. Based on this assumption, the percentage used comes from Table data of room sold during 2011 as shown in Appendix three.

*Capacity Cost Rate for Room Type: Superior:*

The calculation of capacity cost rate for labour is as follows:

Capacity Cost Rate – Labour:

$$= \frac{56.34\% \times 411,450,000 \text{ IDR}}{56.34\% \times 1,571,160 \text{ minutes}}$$

$$\frac{231,810,930 \text{ IDR}}{885,192 \text{ minutes}}$$

$$= 261.88 \text{ IDR/minute}$$

*Capacity Cost Rate for Room Type: Deluxe:*

The calculation of capacity cost rate for labour is as follows:

Capacity Cost Rate – Labour:

$$= \frac{31.98\% \times 411,450,000 \text{ IDR}}{31.98\% \times 1,571,160 \text{ minutes}}$$

$$\frac{131,581,710 \text{ IDR}}{502,457 \text{ minutes}}$$

$$= 261.88 \text{ IDR/minutes}$$

*Capacity Cost Rate for Room Type: Junior Suite:*

The calculation of capacity cost rate for labour is as follows:

Capacity Cost Rate – Labour:

$$= \frac{6.81\% \times 411,450,000 \text{ IDR}}{6.81\% \times 1,571,160 \text{ minutes}}$$

$$\frac{28,019,745 \text{ IDR}}{106,996 \text{ minutes}}$$

$$= 261.88 \text{ IDR/minute}$$

*Capacity Cost Rate for Room Type: Royal Suite:*

The calculation of capacity cost rate for labour is as follows:

Capacity Cost Rate – Labour:

$$= \frac{4.87\% \times 411,450,000 \text{ IDR}}{4.87\% \times 1,571,160 \text{ minutes}}$$

$$\frac{20,037,615 \text{ IDR}}{76,516 \text{ minutes}}$$

$$= 261.88 \text{ IDR/minute}$$

***Determining the TDABC Cost Driver Rates***

The TDABC Cost Driver Rate for every activity is estimated in unit time. This calculation will result in unit cost, which has become the most important component for the TDABC model. The unit cost reflects how much costs are required for the completion of a single activity.

Because of the calculation of capacity cost rate results in the same amount of costs for all room types (261.88 IDR/minute), the calculations for TDABC Cost Driver Rate for all room types shown in Appendix Four.

***Determining the TDABC Cost of Performing Activities and the Room Cost***

This last step determines both the absorption rate resource for each activity and the level of efficiency for each room type. TDABC cost of performing activities was done by multiplying the cost driver rate with quantity of work. This step also delivers the information about the level of used and unused capacity.

The calculation of TDABC cost of performance will be differentiated according to the list of activities. It is important to remember that the hotel has two types of room rent methods, which are the *reservation* method and the *go show* method. The use of one method would produce different results with the other methods, due to the large differences in unit time between the two (reservations just need 1 minute, while go shows need 4 minutes). Based on the table cost of performing activities, we can calculate the room cost. The cost of performing activities table, delivers information about

the usage of overhead cost. To calculate the room cost, the researchers put the “used capacity” amount as the overhead cost.

Direct Materials and Direct Labour is calculated by multiplying with the percentage of room sold. The researchers also put the depreciation expense and electricity and water in the room cost calculation.

#### The Superior Room Reservation Cost Calculation in Year 2011

Direct Materials:	1,872,030,000 x 56.34%	1,054,701,702.00	IDR
Direct Labour:	407,550,000 x 56.34%	229,613,670.00	IDR
Overhead: Indirect Labour		64,871,541.49	IDR
	<b>Total Cost</b>	<b>1,349,186,913.49</b>	IDR

#### The Superior Room ‘Go show’ Cost Calculation in Year 2011

<i>Direct Materials:</i>	1,872,030,000 x 56.34%	1,054,701,702.00	IDR
<i>Direct Labour:</i>	407,550,000 x 56.34%	229,613,670.00	IDR
<i>Overhead: Indirect Labour</i>		68,226,966.04	IDR
	<b>Total Cost</b>	<b>1,352,542,338.04</b>	IDR

#### The Deluxe Room Unit Reservation Cost Calculation in Year 2011

Direct Materials:	1,872,030,000 x 31.98%	598,675,194.00	IDR
Direct Labour:	407,550,000 x 31.98%	130,334,490.00	IDR
Overhead: Indirect Labour		36,817,751.48	IDR
	<b>Total Cost</b>	<b>765,827,435.48</b>	IDR

#### The Deluxe Room Unit Reservation Cost Calculation in Year 2011

Direct Materials:	1,872,030,000 x 31.98%	598,675,194.00	IDR
Direct Labour:	407,550,000 x 31.98%	130,334,490.00	IDR
Overhead: Indirect Labour		38,087,329.11	IDR
	<b>Total Cost</b>	<b>767,097,013.11</b>	IDR

#### The Junior Suite Room Reservation Cost Calculation in Year 2011

Direct Materials:	1,872,030,000 x 6.81%	127,485,243.00	IDR
Direct Labour:	407,550,000 x 6.81%	27,754,155.00	IDR
Overhead: Indirect Labour		7,852,630.99	IDR
	<b>Total Cost</b>	<b>163,092,028.99</b>	IDR

#### The Junior Suite Room ‘Go show’ Cost Calculation in Year 2011

Direct Materials:	1,872,030,000 x 6.81%	127,485,243.00	IDR
Direct Labour:	407,550,000 x 6.81%	27,754,155.00	IDR
Overhead: Indirect Labour		8,258,801.56	IDR
	<b>Total Cost</b>	<b>163,498,199.56</b>	IDR

**The Royal Suite Reservation Room Cost Calculation in Year 2011**

Direct Materials:	1,872,030,000 x 4.87%	91,167,861.00	IDR
Direct Labour:	407,550,000 x 4.87%	19,847,685.00	IDR
Overhead: Indirect Labour		5,604,682.47	IDR
	<b>Total Cost</b>	<b>116,620,228.47</b>	IDR

**The Royal Suite Room 'Go Show' Cost Calculation in Year 2011**

Direct Materials:	1,872,030,000 x 4.87%	91,167,861.00	IDR
Direct Labour:	407,550,000 x 4.87%	19,847,685.00	IDR
Overhead: Indirect Labour		5,894,579.83	IDR
	<b>Total Cost</b>	<b>116,910,125.83</b>	IDR

**Table 11: Room Cost Comparison Table**

Room Type	Room Cost (IDR)		
	Company Initial calculation method	TDABC Method	
		Reservation	Go show
Superior	443,836	405,764.65	406,550.28
Deluxe	590,302	430,141	430,664.77
Junior Suite	736,768	439,957.87	440,743.5
Royal Suite	1,176,166	497,976.8	498,762.44

*Source : Data processed by Researchers*

From the above calculations it can be seen that the total cost above for the 4,271 'Superior' reservation rooms sold (including depreciation, electricity and water) is as follows:

*Superior Reservation Room Unit Cost:*

= (DM+DL+OH) + Depreciation Expense + Electricity expense + Water Expense

$$\begin{aligned}
 &= \frac{1,349,186,913.49}{4,271} \\
 &+ \frac{540,725 \times 26}{4,271} \\
 &+ 61,841.5 + 24,736.6 \\
 &= 405,764.65 \text{ IDR}
 \end{aligned}$$

Similarly, the room's cost for *Superior type for 'go show' method* is 406,550.28 IDR.

These calculations are elaborated in Appendix Five and Six.

From the above calculations it can also be seen that the total cost above for the 2,424 'Deluxe' reservation rooms sold (including depreciation, electricity and water) is as follows:

*Deluxe reservation Room Unit Cost:*

= (DM+DL+OH) + Depreciation Expense + Electricity expense + Water Expense

$$\begin{aligned}
 &= \frac{765,827,435.48}{2,424} \\
 &+ \frac{540,725 \times 18}{2,424} \\
 &+ 78,707.37 + 31,482.95 \\
 &= 430,141 \text{ IDR}
 \end{aligned}$$

Similarly, the room's unit cost for *Deluxe type for the 'go show' method* is 430,664.77 IDR.

These calculations are elaborated in Appendix Seven and Eight.

From the above calculations it can also be seen that the total cost above for the 517 'Junior Suite' reservation rooms sold (including depreciation, electricity and water) is as follows:

*Junior Suite reservation Room Unit Cost:*

= (DM+DL+OH) + Depreciation Expense + Electricity expense + Water Expense

$$\begin{aligned}
 &= \frac{163,092,028.99}{517} \\
 &+ \frac{665,725 \times 5}{517} \\
 &+ 84,329.32 + 33,731.73 \\
 &= 439,957.87 \text{ IDR}
 \end{aligned}$$

Similarly, the room's unit cost for a *Junior Suite type for 'go show'* is 440,743.5 IDR.

These calculations are elaborated in Appendix Nine and Ten.

From the above calculations it can also be seen that the total cost above for the 369 'Royal Suite' reservation rooms sold (including depreciation, electricity and water) is as follows:

*Royal Suite reservation Room Unit Cost:*

= (DM+DL+OH) + Depreciation Expense + Electricity expense + Water Expense

$$\begin{aligned}
 &= \frac{116,620,228.47}{369} \\
 &+ \frac{3,015,725 \times 3}{369} \\
 &+ 112,439.1 + 44,975.64 \\
 &= 497,976.8 \text{ IDR}
 \end{aligned}$$

Similarly, the room's unit cost for a *Royal Suite type for 'go show'* is 498,762.44 IDR.

These calculations are elaborated in Appendix Eleven and Twelve.

### Traditional vs. TDABC: A Comparison

Based on the above calculations, we can make a comparison of the results of room cost between company's initial method and the TDABC method. This comparison Table 11

will help us to see the room cost differences between two methods more clearly.

It can be seen that there are big differences in the results of room cost calculation between the two methods especially in Junior Suite and Royal Suite. This is because the TDABC method calculates that the room service only absorbs an average of 30% of the indirect labour resource supplied.

### Conclusion, Suggestions and Limitations

Based on the result analysis in the previous paragraphs, the following conclusions can be drawn: (a) cost calculations with the TDABC method using unit time and capacity cost rates which can identify cost per minute or cost assigned for every minute in the accomplishment of an activity is more accurate than the traditional method used by the case study company; (b) the calculation based on the TDABC method also resulted in a cost driver rate (unit cost) which is more accurate as a calculation basis for every process; (c) the unit cost as calculation basis was also easier and more flexible for cost allocations than the traditional method used; (d) in the case of changes in hotel service structures, the capacity cost rate can be updated easily; and (e) the application of TDABC shows that in the year of 2011, room service should only absorb average of 30% of indirect labour resource supplied as their overhead cost.

The following suggestions can be drawn from the study conducted: (a) the evaluation of performance for any activity undertaken by each department should be done regularly, such that continuous improvements will make the unit time more efficient; (b) control over activities that use resources is necessary to enable the cost-efficiency; and (c) as stated previously, the initial cost calculation is based on "management judgment" and adjusting with other hotel price, so during this time the hotel operates with a profit margin per room that is excessively high for their junior suites and royal suites.

Whilst this may appear a good result at face value, in actuality it can result in unoccupied room as competitors are pricing similar services at a reduced price.

Therefore, it is recommended to decrease hotel room rates especially for junior suite and royal suite type as well as doing more vigorous marketing efforts and cover a wider area so that it could bring in more guests.

Another strategy for dealing with the low resource costs required is that, rather than directly cutting the resource supplied, for managers to choose to reserve that capacity for future growth by adding new business lines. From the information provided by TDABC of unused capacity, manager can forecast how much of the increased business can be handled by the existing capacity.

### **Research Limitations**

The limitations in this research are as follows: (a) this research only discusses the room cost in Hotel Graha Cakra Malang, because almost 80% of the hotel's revenue comes from rooms. A wider application of TDABC to other divisions will show further benefits; (b) there is information that was kept secret by the hotel, such as expenses for business trips that are included as routine expenses, building maintenance, etc. so the researcher cannot include these cost in the calculations; and (c) this research only used TDABC as an example, while the actual implementation of TDABC at the Hotel was beyond the scope of this research.

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### Appendix One: List of Activities and the Unit Time Table

No	Activity Cost Pool	Detail of Activity	Time per activity (minute)	Total time each coat pool (minutes)
1.	Administration (Check in)	Welcoming Guest	1	Go show : 9 Reservation : 6
		Asked on whether the guest has made a previous reservation or go show	1	
		<b><u>If go show</u></b> Record the guest data	4	
		<b><u>If reservation</u></b> Ask for proof of a reservation, Do some checking	1	
		Provide guest room key	1	
		Asking guests if there are any valuable goods that want to be stored in safety box, because there is not safety box in each rooms	2	
2.	Greeting	Provide a welcoming basket food and drink to the guests	5	5
3.	Accompanying the guest	Carries the guest's stuffs and take guests into the room	10	10
4.	SDM (sweeping, dusting mopping)	Housekeeping doing room cleaning	25	25
5.	Administration (check out)	FO contact HK for room check, is there any goods that bought by guest and checking for guest stuff that is left front	6	12
		FO contact FandB to check out the guest dining Bill	2	
		Print the bill	1	
		Ask for guest's signature	1	
		Receive the payment	2	
TOTAL				Go show 61 /reservation 58

### Appendix Two: Practical Capacity Resource Used – Employee Working Time

No	Position	Qty	Work Time (minutes)	Unproductive Time (minutes)			Total Effective minutes
				Rest	Training	Total	
1.	General Manager	1	149,760	18,720	-	18,720	131,040
2.	Front Office Manager	1	149,760	18,720	120	18,840	130,920
3.	Front Office Coordinator	1	149,760	18,720	120	18,840	130,920
4.	Receptionist	4	149,760	18,720	120	18,840	523,680
5.	Bellboy	3	149,760	18,720	120	18,840	392,760
6.	Front Office Cashier	2	149,760	18,720	120	18,840	261,840
<b>TOTAL</b>							<b>1,571,160</b>
<i>Total Effective minutes is a result from multiplication process with quantity of employee for each position</i>							
Source: Company Internal data processed							

### Appendix Three: Data of Room Sold during the year of 2011

No.	Month	Room type				TOTAL
		Superior	Deluxe	Junior Suite	Royal Suite	
1.	January	329	184	48	23	552
2.	February	321	171	35	29	598
3.	March	388	209	47	34	674
4.	April	352	185	39	31	623
5.	May	392	226	41	34	694
6.	June	415	278	49	36	721
7.	July	401	268	53	36	736
8.	August	362	172	43	32	643
9.	September	351	198	35	31	618
10.	October	310	179	28	26	562
11.	November	327	165	45	29	589
12.	December	323	189	54	28	570
TOTAL		4,271	2,424	517	369	7,580
Percentage		56.34%	31.98%	6.81%	4.87%	100%
Source: Hotel Graha Cakra data, modified by Researchers						

### Appendix Four: TDABC Cost Driver Rates

No	Activity	TDABC Cost Driver	
		Unit Time (minute)	Rate-Labour (at 261.88IDR/minute)
(1)	(2)	(3)	(4)
1.	Welcoming Guest	1	261.88
2.	Asked on whether the guest has made a previous reservation or go show	1	261.88
3.	<b><u>If go show</u></b> Record the guest data	4	1,047.50
4.	<b><u>If Reservation</u></b> Ask for proof of a reservation Do some checking	1	261.88
5.	Provide guest room key	1	261.88
6.	Ask the guests if there are any valuable goods that want to be stored in safety box, because there is not safety box in each rooms	2	523.75
7.	Provide a welcoming basket food and drink to the guests	5	1,309.38
8.	Carries the guest's stuffs and take guests into the room	10	2,618.76
9.	Housekeeping doing room cleaning	25	6,546.91
10.	FO contact HK for room check, is there any goods that bought by guest and checking for guest stuff that is left front	6	1,571.26
11.	FO contact FandB to check out the guest dining Bill	2	523.75
12.	Print the bill	1	261.88
13.	Ask for guest's signature	1	261.88
14.	Receive the payment	2	523.75
Columns 2 explain list of activities based on table 4.14 (table of activities)			
Columns 3 explain time estimation based on the result from stopwatch that brought by researcher and interview			
Columns 4 = column (3) times with 261.88 IDR/minute (capacity cost rate-labour)			
Source: Company internal data processed			

**Appendix Five: TDABC Cost of Performing Activities (Superior- Reservation)**

No	Activity	Qty	Time (minute)		Cost (IDR)	
			Unit	Total	Unit	Total
1	2	3	4	5 = 3 x 4	6	7 = 3 x 6
1	Welcoming Guest	4,271	1	4,271	261.88	1,118,474.85
2	Asked on whether the guest has made a previous reservation or go show	4,271	1	4,271	261.88	1,118,474.85
3	Ask for proof of a reservation Do some checking	4,271	1	4,271	261.88	1,118,474.85
4	Provide guest room key	4,271	1	4,271	261.88	1,118,474.85
5	Asking guests if there are any valuable goods that want to be stored in safety box, because there is not safety box in each rooms	4,271	2	8,542	523.75	2,236,949.71
6	Provide a welcoming basket food and drink to the guests	4,271	5	21,355	1,309.38	5,592,374.27
7	Carries the guest's stuffs and take guests into the room	4,271	10	42,710	2,618.77	11,184,748.53
8	Housekeeping doing room cleaning	4,271	25	106,775	6,546.91	27,961,871.33
9	FO contact HK for room check, is there any goods that bought by guest and checking for guest stuff that is left front	4,271	6	25,626	1,571.26	6,710,849.12
10	FO contact FandB to check out the guest dining Bill	4,271	2	8,542	523.75	2,236,949.71
11	Print the bill	4,271	1	4,271	261.88	1,118,474.85
12	Ask for guest's signature	4,271	1	4,271	261.88	1,118,474.85
13	Receive the payment	4,271	2	8,542	523.75	2,236,949.71
<b>Used Capacity</b>				247,718		64,871,541.49
<b>Unused Capacity</b>				637,474		166,939,388.51
<b>TOTAL</b>				<b>885,192</b>		<b>231,810,930</b>

**Appendix Six: TDABC Cost of Performing Activities (Superior- Go show)**

No	Activity	Qty	Time (minute)		Cost (IDR)	
			Unit	Total	Unit	Total
1	2	3	4	5 = 3 x 4	6	7 = 3 x 6
1	Welcoming Guest	4,271	1	4,271	261.88	1,118,474.85
2	Asked on whether the guest has made a previous reservation or go show	4,271	1	4,271	261.88	1,118,474.85
3	Record the guest data	4,271	4	17,084	1,047.51	4,473,899.41
4	Provide guest room key	4,271	1	4,271	261.88	1,118,474.85
5	Asking guests if there are any valuable goods that want to be stored in safety box, because there is not safety box in each rooms	4,271	2	8,542	523.75	2,236,949.71
6	Provide a welcoming basket food and drink to the guests	4,271	5	21,355	1,309.38	5,592,374.27
7	Carries the guest's stuffs and take guests into the room	4,271	10	42,710	2,618.77	11,184,748.53
8	Housekeeping doing room cleaning	4,271	25	106,775	6,546.91	27,961,871.33
9	FO contact HK for room check, is there any goods that bought by guest and checking for guest stuff that is left front	4,271	6	25,626	1,571.26	6,710,849.12
10	FO contact FandB to check out the guest dining Bill	4,271	2	8,542	523.75	2,236,949.71
11	Print the bill	4,271	1	4,271	261.88	1,118,474.85
12	Ask for guest's signature	4,271	1	4,271	261.88	1,118,474.85
13	Receive the payment	4,271	2	8,542	523.75	2,236,949.71
<b>Used Capacity</b>				260,531		68,226,966.04
<b>Unused Capacity</b>				624,661		163,583,964.96
<b>TOTAL</b>				<b>885,192</b>		<b>231,810,930</b>

**Appendix Seven: TDABC Cost of Performing Activities (Deluxe- Reservation)**

No	Activity	Qty	Time (minute)		Cost (IDR)	
			Unit	Total	Unit	Total
1	2	3	4	5 = 3 x 4	6	7 = 3 x 6
1	Welcoming Guest	2,424	1	2,424	261.88	634,788.82
2	Asked on whether the guest has made a previous reservation or go show	2,424	1	2,424	261.88	634,788.82
3	Ask for proof of a reservation Do some checking	2,424	1	2,424	261.88	634,788.82
4	Provide guest room key	2,424	1	2,424	261.88	634,788.82
5	Asking guests if there are any valuable goods that want to be stored in safety box, because there is not safety box in each rooms	2,424	2	4,848	523.75	1,269,577.64
6	Provide a welcoming basket food and drink to the guests	2,424	5	12,120	1,309.38	3,173,944.09
7	Carries the guest's stuffs and take guests into the room	2,424	10	24,240	2,618.77	6,347,888.19
8	Housekeeping doing room cleaning	2,424	25	60,600	6,546.91	15,869,720.46
9	FO contact HK for room check, is there any goods that bought by guest and checking for guest stuff that is left front	2,424	6	14,544	1,571.26	3,808,732.91
10	FO contact FandB to check out the guest dining Bill	2,424	2	4,848	523.75	1,269,577.64
11	Print the bill	2,424	1	2,424	261.88	634,788.82
12	Ask for guest's signature	2,424	1	2,424	261.88	634,788.82
13	Receive the payment	2,424	2	4,848	523.75	1,269,577.64
<b>Used Capacity</b>				140,592		36,817,751.48
<b>Unused Capacity</b>				361,865		94,763,958.52
<b>TOTAL</b>				<b>502,457</b>		<b>131,581,710</b>

**Appendix Eight: TDABC Cost of Performing Activities (Deluxe- Go show)**

No	Activity	Qty	Time (minute)		Cost (IDR)	
			Unit	Total	Unit	Total
1	2	3	4	5 = 3 x 4	6	7 = 3 x 6
1	Welcoming Guest	2,424	1	2,424	261.88	634,788.82
2	Asked on whether the guest has made a previous reservation or go show	2,424	1	2,424	261.88	634,788,82
3	Record the guest data	2,424	4	9,696	1,047.51	2,539,155.27
4	Provide guest room key	2,424	1	2,424	261.88	634,788.82
5	Asking guests if there are any valuable goods that want to be stored in safety box, because there is not safety box in each rooms	2,424	2	4,848	523.75	1,269,577.64
6	Provide a welcoming basket food and drink to the guests	2,424	5	12,120	1,309.38	3,173,944.09
7	Carries the guest's stuffs and take guests into the room	2,424	10	24,240	2,618.77	6,347,888.19
8	Housekeeping doing room cleaning	2,424	25	60,600	6,546.91	15,869,720.46
9	FO contact HK for room check, is there any goods that bought by guest and checking for guest stuff that is left front	2,424	6	14,544	1,571.26	3,808,732.91
10	FO contact FandB to check out the guest dining Bill	2,424	2	4,848	523.75	1,269,577.64
12	Ask for guest's signature	2,424	1	2,424	261.88	634,788.82
13	Receive the payment	2,424	2	4,848	523.75	1,269,577.64
<b>Used Capacity</b>				150,456		38,087,329.11
<b>Unused Capacity</b>				352,001		93,494,380.89
<b>TOTAL</b>				<b>502,457</b>		<b>131,581,710</b>

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**Appendix Nine: TDABC Cost of Performing Activities (Junior Suite- Reservation)**

No	Activity	Qty	Time (minute)		Cost (IDR)	
			Unit	Total	Unit	Total
1	2	3	4	5 = 3 x 4	6	7 = 3 x 6
1	Welcoming Guest	517	1	517	261.88	135,390.19
2	Asked on whether the guest has made a previous reservation or go show	517	1	517	261.88	135,390.19
3	Ask for proof of a reservation Do some checking	517	1	517	261.88	135,390.19
4	Provide guest room key	517	1	517	261.88	135,390.19
5	Asking guests if there are any valuable goods that want to be stored in safety box, because there is not safety box in each rooms	517	2	1,034	523.75	270,780.38
6	Provide a welcoming basket food and drink to the guests	517	5	2,585	1,309.38	676,950.95
7	Carries the guest's stuffs and take guests into the room	517	10	5,170	2,618.77	1,353,901.89
8	Housekeeping doing room cleaning	517	25	12,925	6,546.91	3,384,754.74
9	FO contact HK for room check, is there any goods that bought by guest and checking for guest stuff that is left front	517	6	3,102	1,571.26	812,341.14
10	FO contact FandB to check out the guest dining Bill	517	2	1,034	523.75	270,780.38
11	Print the bill	517	1	517	261.88	135,390.19
12	Ask for guest's signature	517	1	517	261.88	135,390.19
13	Receive the payment	517	2	1,034	523.75	270,780.38
<b>Used Capacity</b>				29,986		7,852,630.99
<b>Unused Capacity</b>				77,010		20,167,114.01
<b>TOTAL</b>				<b>106,996</b>		<b>28,019,745</b>

**Appendix Ten: TDABC Cost of Performing Activities (Junior Suite- Go show)**

No	Activity	Qty	Time (minute)		Cost (IDR)	
			Unit	Total	Unit	Total
1	2	3	4	5 = 3 x 4	6	7 = 3 x 6
1	Welcoming Guest	517	1	517	261.88	135,390.19
2	Asked on whether the guest has made a previous reservation or go show	517	1	517	261.88	135,390.19
3	Record the guest data	517	4	2,068	1,047.51	541,560.76
4	Provide guest room key	517	1	517	261.88	135,390.19
5	Asking guests if there are any valuable goods that want to be stored in safety box, because there is not safety box in each rooms	517	2	1,034	523.75	270,780.38
6	Provide a welcoming basket food and drink to the guests	517	5	2,585	1,309.38	676,950.95
7	Carries the guest's stuffs and take guests into the room	517	10	5,170	2,618.77	1,353,901.89
8	Housekeeping doing room cleaning	517	25	12,925	6,546.91	3,384,754.74
9	FO contact HK for room check, is there any goods that bought by guest and checking for guest stuff that is left front	517	6	3,102	1,571.26	812,341.14
10	FO contact FandB to check out the guest dining Bill	517	2	1,034	523.75	270,780.38
11	Print the bill	517	1	517	261.88	135,390.19
12	Ask for guest's signature	517	1	517	261.88	135,390.19
13	Receive the payment	517	2	1,034	523.75	270,780.38
<b>Used Capacity</b>				31,537		8,258,801.56
<b>Unused Capacity</b>				75,459		19,760,943.44
<b>TOTAL</b>				<b>106,996</b>		<b>28,019,745</b>

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**Appendix Eleven: TDABC Cost of Performing Activities (Royal Suite- Reservation)**

No	Activity	Qty	Time (minute)		Cost (IDR)	
			Unit	Total	Unit	Total
1	2	3	4	5 = 3 x 4	6	7 = 3 x 6
1	Welcoming Guest	369	1	369	261.88	96,632.46
2	Asked on whether the guest has made a previous reservation or go show	369	1	369	261.88	96,632.46
3	Ask for proof of a reservation Do some checking	369	1	369	261.88	96,632.46
4	Provide guest room key	369	1	369	261.88	96,632.46
5	Asking guests if there are any valuable goods that want to be stored in safety box, because there is not safety box in each rooms	369	2	738	523.75	193,264.91
6	Provide a welcoming basket food and drink to the guests	369	5	1,845	1,309.38	483,162.28
7	Carries the guest's stuffs and take guests into the room	369	10	3,690	2,618.77	966,324.56
8	Housekeeping doing room cleaning	369	25	9,225	6,546.91	2,415,811.41
9	FO contact HK for room check, is there any goods that bought by guest and checking for guest stuff that is left front	369	6	2,214	1,571.26	579,794.74
10	FO contact FandB to check out the guest dining Bill	369	2	738	523.75	193,264.91
11	Print the bill	369	1	369	261.88	96,632.46
12	Ask for guest's signature	369	1	369	261.88	96,632.46
13	Receive the payment	369	2	738	523.75	193,264.91
<b>Used Capacity</b>				21,402		5,604,682.47
<b>Unused Capacity</b>				55,114		14,432,932.53
<b>TOTAL</b>				<b>76,516</b>		<b>20,037,615</b>

**Appendix Twelve: TDABC Cost of Performing Activities (Royal Suite- Go show)**

No	Activity	Qty	Time (minute)		Cost (IDR)	
			Unit	Total	Unit	Total
1	2	3	4	5 = 3 x 4	6	7 = 3 x 6
1	Welcoming Guest	369	1	369	261.88	96,632.46
2	Asked on whether the guest has made a previous reservation or go show	369	1	369	261.88	96,632.46
3	Record the guest data	369	4	1,476	1,047.51	386,529.83
4	Provide guest room key	369	1	369	261.88	96,632.46
5	Asking guests if there are any valuable goods that want to be stored in safety box, because there is not safety box in each rooms	369	2	738	523.75	193,264.91
6	Provide a welcoming basket food and drink to the guests	369	5	1,845	1,309.38	483,162.28
7	Carries the guest's stuffs and take guests into the room	369	10	3,690	2,618.77	966,324.56
8	Housekeeping doing room cleaning	369	25	9,225	6,546.91	2,415,811.41
9	FO contact HK for room check, is there any goods that bought by guest and checking for guest stuff that is left front	369	6	2,214	1,571.26	579,794.74
10	FO contact FandB to check out the guest dining Bill	369	2	738	523.75	193,264.91
11	Print the bill	369	1	369	261.88	96,632.46
12	Ask for guest's signature	369	1	369	261.88	96,632.46
13	Receive the payment	369	2	738	523.75	193,264.91
<b>Used Capacity</b>				22,509		5,894,579.83
<b>Unused Capacity</b>				54,007		14,143,035.17
<b>TOTAL</b>				<b>76,516</b>		<b>20,037,615</b>