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The Application of the Amos Tourism Accommodation Profiling Method in Financial Viability Assessments

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Abstract: Evaluating trends and developments in the tourism accommodation industry often requires analysis of the financial viability of specific tourism accommodations. However, proprietary financial information for such accommodations is often not easily available, thus making it difficult to perform such an analysis. More importantly, this difficulty is exacerbated by the marked lack of a model or financial profiling method capable of generating financial information for existing or proposed tourism accommodations. This paper presents a new method, created by the author, whereby individual resort's operational cash flows in currency amounts become ascertainable. "The Amos Tourism Accommodation Profiling Method" enables the recreation of historic cash flow representations, which facilitate the modeling of investment recovery positions for existing resorts and assist in forecasting potential returns of future resorts.

Key words: Amos · Hotel · Real estate · Hospitality finance · Accommodation profile

INTRODUCTION

Tourism currently contributes impressively to the global economy. In fact, tourism generates over 10% of the gross global product [1]. The industry is worth an estimated US$ 5,474,000,000,000 and is expected to grow to US$ 10,478,000,000,000 (a 91% increase) by 2019 [2, 3].

Not only is the tourism industry responsible for supplying the global economy with large amounts of revenue, the number of actual tourists traveling is also increasing. Between 2007 and 2008, total international tourist arrivals increased by 2% reaching 924 million in 2008 [4].

Such a massive influx of tourists needing accommodation can't help but influence the tourism industry at large. A staggering 7.6% of worldwide employment is contributed to by the travel and tourism industry [2]. In 2009, that meant 219,810,000 jobs; the equivalent of 1 in every 13.1 jobs existed solely because of the tourism industry. The number of people employed by the industry will only keep growing, with estimates projecting that 275,000,000 people or 8.4 percent of global jobs will come from the travel and tourism industry by 2019 [5].

A significant portion of jobs and revenue generated by the global tourism industry comes specifically from the tourism accommodation sector. New hotels are constantly springing up around the world. Old hotels are reconfigured and refitted or torn down and completely and reconstructed. The financial viability of these tourism accommodations is subsequently scrutinized by analysts and consultants in the employ of development companies and other institutions.

These development companies and institutions have transformed from intuition-based to analytical-based decision making [6]. Due to globalization and other factors, the ways in which business is conducted is becoming increasingly complex, making more accurate analytical information profoundly necessary. Specifically, a significant part of the financial analysis of tourism accommodations includes the use of ratios and mathematical formulas [7, 8]. Tourism accommodation's statements of cash flow provide key data needed to generate these ratios. Despite current reliance on mathematical formulas in evaluation of the tourism accommodation sector, there is a gap in the financial methods currently used by the hospitality industry [9].

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The need for improvement in budgeting and forecasting methods is undeniable for although industry reliance on such methods of evaluation *is* well documented, there still remains a lack of a *comprehensive* record detailing the concepts used by the tourism accommodation sector for evaluation. Indeed, there are yet other areas of financial analysis where no methods for analysis exits or the methods that do exist are inadequate.

The financial viability of tourism accommodations is difficult to ascertain for the third party investigator who is not privy to the confidential information available to the in-house consultants working for these development companies. On one hand, industry reports containing detailed information about many aspects of tourism accommodation's configuration and operational cash flows are available. On the other hand, the operational cash flow data given in these publications is restricted mainly to ratios, room rate and occupancy information. These reports do not give currency figures for individual resorts. Thus, it is impossible to recreate historic cash flow representations and model investment recovery positions for existing resorts, or to forecast potential returns of future resorts.

Difficulty arises because parties not privy to propriety financial data suffer a marked lack of a model or financial profiling method capable of generating financial information for existing or proposed tourism accommodations. In addition, this lack of an existing model creates difficulty for researchers and professionals in the hospitality industry when attempting to evaluate the financial viability of new concepts. Contributing to the overall problem is an additional lack of sources providing researchers and industry specialists with propriety financial data. Significant gains in hospitality research could be made if there was such a model or financial profiling method whereby researchers could generate a financial profile of multiple resorts in order to evaluate the financial effects of new operational or design concepts.

"The Amos Tourism Accommodation Profiling Method" (Amos TAP Method), enables the recreation of historic cash flow representations and modeling of investment recovery positions for existing resorts. The model is also capable of assisting in forecasting potential returns for future resorts. With the application of "The Amos Tourism Accommodation Profiling Method", parties not privy to propriety resort cash flow information will have the ability to recreate representations of critical financial data, thus aiding in both academic research and resort development planning.

MATERIALS AND METHODS

This research introduces the application of a system of data configuration and calculation. The method of research is a focused design-demonstration approach, whereby a new tourism accommodation profiling method is composed and its application presented. The method proposed in this paper has mathematical roots in the Cross Product Method, a computation method used in calculus [10]. This method of mathematical calculation is used to find missing variables in a set of two fractions that are proportional[1]. The design of this method breaks the profiling process down into 8 manageable steps. Each step builds on the last, compiling and assimilating information until the final step, which yields specific earnings figures.

The Amos Tourism Accommodation Profiling Method (Amos TAP Method), is a hotel operation and investment profiling tool enabling users to generate operational financial data for a theoretic or existing hospitality accommodation facility. This Method was created to give a third party user (person without access to privy financial information) the ability to recreate a hotel's operational financial profile.

Use of this model yields data that are helpful in understanding tourism accommodation markets. The data will also aid in operation management and capital budgeting decisions. The Amos TAP Method is particularly useful for the creation of feasibility studies and competitive intelligence reports. The information generated using this model is not intended to be a 100% accurate recreation of actual financial statements for a hotel or resort, but rather the model generates data representative of the facility's operations.

RESULTS AND DISCUSSION

The Amos Tourism Accommodation Profiling Method: Industry publications contain detailed information restricted mainly to ratios, room rate and occupancy information. These reports do not give currency figures for individual resorts. If an individual resort's operational cash flows in currency amounts were ascertainable, the benefits would be far-reaching. Some of these benefits include the ability to recreate historic cash flow representations and model investment recovery positions for existing resorts and forecasting potential returns of

[1]Drexel University. (n.d.). *The Math Forum*. Retrieved Feb 1, 2010, from http://mathforum.org/library/drmath/view/58034.html

Amos Tourism Accommodation Profiling Method
-8 stepped process that enables users to generate operational data for a theoretic or existing hospitality accommodation facility

Amos Control Theorem
-3 phased equation that outputs essential data including the Amos Control Ratio.

Amos Control Ratio
-Ratio that allows the user to create dynamic financial projection systems

Fig. 1: Amos TAP Method Important Terms

Table 1: Eight Steps of the Amos TAP Method

Step 1	Identify subject facility
Step 2	Gather market segment industry data
Step 3	Gather facility specific data
Step 4	Apply Amos Control Theorem to generate departmental revenues and Amos Control Ratios
Step 5	Apply ratios to estimate total revenues
Step 6	Apply market segment operations costs ratios to individual departments
Step 7	Apply market segment operations costs ratios to undistributed expenses and fixed costs
Step 8	Generate EBITDA estimations for required time period

future resorts. Thus, for the purposes of this study, the author has created a new method whereby an individual resort's operational cash flows in currency amounts become ascertainable. This method is called "The Amos Tourism Accommodation Profiling Method" (The Amos TAP Method) (Figure 1).

The Amos TAP Method Consists of the Following Process (Table 1)

Identify Subject Facility: The first step in The Amos TAP Method is to identify the resort or "tourism accommodation facility" for which operational financial data will be generated. This resort could be an existing, future, or hypothetical resort designed to generate benchmark data.

Gather Market Segment Industry Data: After the resort has been identified, industry information must be compiled. The specific data to be located includes market segment historic ADR, occupancies and resort sizes, as well as operation cost ratios and departmental revenue ratios. These types of information are readily available in industry reports such as Horwarth, Smith Travel Research and HVS Hospitality Services publications, as well as others. This information can also be found in reports by development companies and brokerage agencies such as Jones Lang LaSalle and CB Richard Ellis. Additionally, some government agencies publish data related to individual resorts specifically and the hospitality accommodation market in general.

Gather Facility-Specific Data: When sufficient industry data have been compiled, critical facility-specific information must be gathered. This information includes the number of rooms in the facility, historic ADRs and occupancies of the facility. Facility specific ADRs and occupancies can often be found in industry publications. Room counts can be found on company websites. Additional information can also be helpful in generating more accurate data. Such information may include any historic increases or decreases in room numbers, major upgrades to the facility and management changes, etc.

Apply Amos Control Theorem to Generate Departmental Revenues and Amos Control Ratios: The next step is the application of the Amos Control Theorem. This Theorem works in three phases. Each phase outputs a critical data point that is used in order to complete The Amos TAP Method (Figure 2).

Phase 1

$$f(y) = \frac{r}{a} \times \frac{a}{t \times \beta} \times t \times \beta$$

Phase 2

$$f(\omega) = \frac{\frac{x}{l}\left(\frac{r}{a} \times \frac{a}{t \times \beta} \times t \times \beta\right)}{\frac{r}{l}}$$

Phase 3

$$f(z) = \frac{\frac{x}{l}\left(\frac{r}{a} \times \frac{a}{t \times \beta} \times t \times \beta\right)}{\frac{r}{l}} \times \frac{1}{\left(\frac{r}{a} \times \frac{a}{t \times \beta} \times t \times \beta\right)}$$

Or simplified as

$$f(z) = \frac{\frac{x}{l}}{\frac{r}{l}}$$

Phase 1 *y=Room Revenue* *Phase 2* *ω= Department Revenue* *Phase 3* *z=Amos Control Ratio (Departmental Revenue to Room Revenue Ratio)*	*x=Departmental Revenue* *l=Total Revenue* *a=Total Rooms Sold* *t=Total Room Count* *ϵ=Occupancy* *β=Period* *r=Room Revenue*

Source: Author

Fig. 2: Amos Control Theorem

- The first phase of the Theorem outputs the facility's Total Room Revenue.
- The second phase of the Theorem outputs Departmental Revenue.
- The third phase of the Amos Control Theorem outputs the Amos Control Ratio (Department to Total Room Revenue Ratio).

The Amos Control Ratio is critical because when used in conjunction with the first phase output (the Total Room Revenue), it enables the creation of a dynamic financial projection system (using a spread sheet program) where a single input variable controls the automatic calculation of an entire set of financial data. The Amos Control Theorem is based on the Cross Product Method for finding missing terms in equivalent proportions. The linear (not simplified) notation of the Amos Control Theorem is as follows:

$$f(z) = \frac{\frac{x}{l}\left(\frac{r}{a} \times \frac{a}{t \times \beta} \times t \times \beta\right)}{\frac{r}{l}} \times \frac{1}{\left(\frac{r}{a} \times \frac{a}{t \times \beta} \times t \times \beta\right)}$$

At first glance, the Amos Control Theorem can be algebraically simplified quite easily. Oversimplification, however, destroys its functionality. This is because many aspects of the equation that can be simplified are based on industry data comprised of individual components that cannot be isolated. For instance *r*/*a* in the equation above is *room revenue*/*total rooms sold*. This is also known as ADR or Average Daily Rate. The ADR for a specific

facility or for an entire market segment is often easily found in industry reports. However, the total room revenue of a particular hotel (or the total average room revenue of all hotels in a segment) will, most likely, never be publicly available. Therefore, if either variable *r* or variable *a* are simplified out of the Amos Control Theorem, the Theorem is no longer viable as the remaining figure will not be ascertainable as a lone variable.

Amos Control Theorem First Phase: Once the required data have been collected, they must be inserted into the Amos Control Theorem. The *room revenue* to *total revenue* percentage (*r*/*l*) as a segment average can usually be found in industry reports. If the subject facility is a competitor in the luxury segment, then the average *room revenue to total revenue* percentage for that segment is used and then adjusted as needed to match the particulars of the hotel as identified in Step 3 of the Amos TAP Method.

The next step in completing the Amos Control Theorem is to input the *ADR* (*r*/a) information. As mentioned above, the ADR is equal to *room revenue* divided by *total rooms sold.* If the subject facility is an existing resort, than that resort's ADR for a given year is inserted. Individual resort ADRs for multiple years can often be found in industry reports or government reports. If the subject facility is a benchmark hypothetical resort, then the segment average should be inserted. If the subject facility is a resort in planning, then the target *ADR* is used.

The *occupancy* ($\frac{a}{t \times \beta}$) is the next aspect to be evaluated and to be assigned value. *Occupancy* equals *total rooms sold* divided by *total rooms* times the *period*. The *occupancy* input follows the same method as the *ADR* input with variations made according to the subject facility. The *room count* (*t*) of an existing subject facility can usually be found on the resort's website. If the subject is a benchmark hypothetical resort, then the average room count for the segment must be calculated from industry reports. If the subject facility is a resort in planning, then the target room count is inserted.

The *period* (â) variable is the number of days in the comparison period. This comparison period is most often a year so 365 is used. However, it may be necessary to use quarters or months depending on the type of analyses to be performed.

The final aspect of the equation to input is the *departmental revenue to total revenue* (*x*/*l*) ratio. The *departmental revenue to total revenue* as a segment average can usually be found in industry reports. If the subject facility is a competitor in the luxury segment, then the average *departmental revenue* to *total revenue* percentage for that segment is used and then adjusted as needed to match the particulars of the hotel as identified in Step 3 of the Amos TAP Method.

When the Amos Control Theorem is written in concept form, it appears as depicted in Figure 3.

Once the information above is put in place, the user can complete the necessary phases of the theorem. The first phase of the theorem involves solving for variable *ã* or *room revenue*. The multiplication of *ADR*, *occupancy*, *room count* and *period* ($\frac{r}{a} \times \frac{a}{t \times \beta} \times t \times \beta$) will yield the *Room Revenue* for the *Period*.

Amos Control Theorem Second Phase: The second phase of the theorem will output *ù* or *department revenue*. These revenues must be summed in order to find the facility's *total operating revenue*. However, using only Phase 1 and 3 to easily find individual *department revenues* is also possible. The use of Phase 2 will depend on the nature of analysis of the facility.

Amos Control Theorem Third Phase: Calculation for the third phase of the Amos Control Theorem will output a figure evidencing an individual department's Amos Control Ratio. The Amos Control Ratio is not a difficult number to calculate. In its simplest terms, it is the proportion of *departmental revenue* to *room revenue*. The importance of this control ratio is found in its application, however, not in its calculation. It allows the user to create a dynamic financial projection system where the only static input variable is the total room revenue.

$$f(z) = \frac{Departmental\ Revnue\ to\ Total\ Revenue\left(ADR \times Occupancy \times Room\ Count \times Period\ (year, 365)\right)}{Room\ Revenue\ to\ Total\ Revenue} \times \frac{1}{(ADR \times Occupancy \times Room\ Count \times Period\ (year, 365)}$$

Fig. 3: The Amos Control Theorem in Concept Form

The Amos Control Theorem must be applied to each revenue-generating department. The product of this exercise will yield multiple department revenues and Amos Control Ratios that will be used in the 5th step of the Amos TAP Method.

Apply Ratios to Estimate Total Revenues: The 5th step of this Method requires the user to perform a number of multiplication calculations where the user multiplies each Amos Control Ratio with the *total room revenue* $(\frac{r}{a} \times \frac{a}{t \times \beta} \times t \times \beta)$ and then sum the products (or sum the individual department revenues from Phase 2 of the theorem). The result of these calculations yields the estimated total revenue for the subject facility.

Apply Market Segment Operations Costs Ratios to Individual Departments: The 6th step of the Amos TAP Method includes the application and adjustment of data collected from industry reports gathered in Step 2 and the gathering of facility specific data as in Step 3. Departmental costs as segment averages can be readily found in industry reports. These figures are given as percentages of department profits. The percentages must be adjusted to fit the subject facility. For instance, if a proposed facility has, or will have, a specialty spa that is heavily marketed, then this aspect will warrant special attention and adjustment to the control ratio. If the average resort has, for example, five spa treatment rooms and the proposed facility will have 15 treatment rooms, then the an appropriate multiple of control ratio will need to be applied. Similarly, if the subject resort is in an isolated area (such as on an island or on a beach in a remote area) then a reasonable assumption may be that the capture rate for the *food and beverage department* will be much higher than the average hotel, as the isolated hotel guests are a captive market. In this instance, again, an appropriate multiplier would be applied to the Amos Control Ratio for the *FandB department*.

Apply Market Segment Operations Costs Ratios to Undistributed Expenses and Fixed Costs: The 7th step of the Amos TAP Method includes another application and adjustment of data collected from industry reports gathered in Step 2 and the gathering of facility specific data as in Step 3. This time, however, the subject of review will not be operating departments but expenses dealing with *undistributed* and *fixed costs,* which can be found quite easily in industry reports. These figures are given as percentages of total revenue (unlike department-specific expense figures, which are usually given as a percentage of the departmental revenue). These percentages must be adjusted to fit the subject facility. For example, the subject facility may be in a location with unreliable power supply and the facility must therefore utilize electrical generators to power the hotel on a regular basis. This would signify that the energy cost ratio would need to be increased. Similarly, if the subject resort is managed in-house, some fee ratios (a type of fixed cost) would need to be reduced.

Generate Ebitda Estimations for Required Time Period: The 8th step of the Amos TAP Method is the generation of EBITDA (earnings before interest, taxes, depreciation and amortization) estimations for the required time period. With all of this information (as calculated above), running a complete cash flow for the subject facility to the EBITDA line is possible.

The resulting EBITDA figure is an estimate of how the subject facility could perform operationally. The Amos TAP Method is not intended to give a perfect figure. The numbers generated from this process, however, should be very similar to the subject facilities actually running costs and operational revenues.

CONCLUSION

This study introduces a new method whereby individual resort's operational cash flows in currency amounts are ascertainable. It enables the recreation of historic cash flow representations of existing resorts, the modeling of investment recovery positions for existing resorts and the forecasting of potential returns of future resorts.

The Amos Tourism Accommodation Profiling Method (The Amos TAP Method), makes it possible to attach a currency figure to the EBITDA percentage (as seen above). By extension, it is also possible to then use this data to analyze the aggregate of multiple years. The process, as outlined above, is followed for each operational year. With the use of Amos Control Ratios, the process of running the Amos TAP Method through a spreadsheet is not difficult. With simple variations in the figures, the user can simulate the opening, ramp-up and standard operation of a resort over multiple years. Manipulation of the figures as necessary can reflect downturns in the economy as well as cost savings through economies of scales as the subject facility expands operations.

The main purpose of the Amos TAP Method is outlined above. However, with additional resources and information, this method can easily be expanded to

include return on investment analysis. Furthermore, with some difficulty it is often possible to estimate land and construction costs for competitor facilities. This information can easily be incorporated into the method which would then give internal rate of return estimates.

As seen from the examples and processes mentioned above, the Amos TAP Method has many applications throughout the hospitality accommodation industry. This hotel operation and investment profiling tool enables users to generate operational data for a theoretic or existing hospitality accommodation facility, which in turn is useful for creating feasibility studies and competitive intelligence reports. This method gives a third party user (person without access to private financial information) the ability to recreate a hotel's historic, present, or future operations profile. In turn, this information would then be available for analysis and consequent use by resort developers or resort management as a base for making better investment and operational decisions.

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