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Room Division Revenue Manager: Profitable, Financial and Performance Ratios

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Abstract

The Room Division Revenue Manager, to do his job efficiently and effectively, must be able to identify indicators in the forecasting phase that can be compared with the data realized. The ratios associated with the figure of the Revenue Manager are, in general, operational ratios of room sales performance. However, it appears very useful, or rather indispensable, to flank these operational performance indicators with ratios analysing the income and financial situation of the Room Division department. The latter are often calculated only concerning the entire accommodation facility. On the contrary, it is indispensable that they are also determined regarding the department Room Division alone because only in the light of these indicators can one understand whether the department Room Division creates or destroys wealth and whether this business sector brings in sources of finance or, on the contrary, drains them, jeopardizing the company's entire financial situation.

Keywords: profit ratios, financial ratios, financial indicators, operative indicators, Room Division Revenue Manager indicators, Room Division Revenue Manager Metrics.

1)The Room Division Revenue Manager and financial, income and performance indicators. Introductory considerations.

The Revenue Manager (Becerra, M, Santaló, J, Silva, R (2013), Becerra, M, Santaló, J, Silva, R (2013), Cheng, CK, Li, XR, Petrick, JF. (2011), Cross, R. G., Higbie, J. A., & Cross, D. Q. (2009) El Gayar, NF, Saleh, M, Atiya, A. (2011), Espinet, JM, Saez, M, Coenders, G. (2003), Yeoman I., (2022), Talluri, K, Van Ryzin, G (2004)), is one of the key figures in a hotel as he is in charge of managing the overall revenue and costs of the various business operating segments. In this article, we will focus our attention only on the Room Division segment (Abrate, G, Fraquelli, G, Viglia, G (2012), (Aslam Modarrs M., Sibdri S., (2013), De Oliveira Santos, GE (2016),) thus leaving out the Food and Beverage Division and the Minor Operating Department.

It could achieve the Room Division Revenue Manager could be gained from a general point of view on the characteristics that must distinguish this figure (Espinete, JM, Saez, M, Coenders, G. (2003), Talluri, KT, Van Ryzin, GJ (2005), Rondan-Cataluña, FJ, Rosa-Diaz, IM (2014)). Since our objective is to delve into the financial profit and performance indicators and ratios associated with this figure, we will leave out all the generic and general analyses on the formation of the Revenue Manager, referring the interested reader to works that delve into this issue.

The Room Division Revenue Manager should have as his main objective not so much the maximisation of the Department's revenues connected to room sales (Chen, CM, Yang, HW, Li, EY. (2015b)) but rather the maximisation of profit from the management of that Division. To maximise profit in the Room Division (Arenoe, B, van der Rest, JPI, Kattuman, P (2015), Espinete, JM, Saez, M, Coenders, G. (2003))and so that the Room Division Revenue Manager achieves the actual objectives that should characterise his tasks, it can argue that this manager must, in coordination with the General Manager, the Room Division Yield Manager, and the Accounting Hotel manager (Papatheodorou, A (2002)), identify:

1) The right price and the right amount of rooms to put on the market

- 2) The right customer
- 3) The right market segment
- 4) The right time
- 5) The proper communication
- 6) The right distribution channel
- 7) The right product
- 8) The optimal marketing mix from a profitability point of view.

As can be seen, the eight elements indicated above are fundamental for the Revenue Manager Room Division to maximize its financial, income and performance objectives (De Oliveira Santos, GE (2016)).

Before illustrating a few considerations regarding the eight elements above, we must point out that our focus will be on a hotel already in operation and, therefore, not on a start-up. This observation is extremely important since, when deciding on the company mission and placing a new company on the market as opposed to an existing one, each of the above-mentioned points must be identified in a tendential manner and then be accompanied by specific observations that allow for possible adjustments in an incremental or decremental sense. Consider, for example, the price-quantity ratio of rooms placed on the market in an enterprise where it has not yet decided which market segment to establish itself (Abrate, G, Fraquelli, G, Viglia, G (2012), Abrate, G, Fraquelli, G, Viglia, G (2012), Arenoe, B, van der Rest, JPI, Kattuman, P (2015), Becerra, M, Santaló, J, Silva, R (2013), Espinet, JM, Saez, M, Coenders, G. (2003)) every decision must, without a doubt, be preceded by the identification of the corporate mission and, consequently, of the market segment in which to place itself. If, however, the corporate management together with the hotel ownership identifies the desirable market segment, it is also evident that in a start-up one must take into account a period of adjustment of all the values indicated in the planning, among which prices and quantity of rooms sold certainly fall. This also applies to identifying the right distribution channel and the correct form of communication. In a start-up, each element is defined based on forecasting calculations based on considerations external to the company since, before that planning phase, as the hotel is a start-up, no historical data exists.

This article will focus our attention on a hotel company already in operation. Therefore, a hotel has already passed the start-up phase and is in an ordinary operating phase. To avoid misunderstandings, it should note that no company does prices, product, communication, marketing mix, or market segment to remain stable, constant and fixed over time. With time, each of them undergoes changes and mutations. Only if this evolution within the company can optimally profit and achieve financial and operational performance. Prolonged static behaviour in any enterprise leads to stagnation and simultaneous expulsion from the market. That said, however, the evolution that must characterise the management of a hotel in operation is quite different from the phase of constant and continuous change that occurs in a start-up. For this reason, we will exclude from our attention the problems associated with hotel start-ups and focus on the issues that hotels have to face on a day-to-day basis in day-to-day operational management (Ansel D., Dyer C. (1999) Aslam Modarrs M., Sibdri S., (2013))

Concerning the first point concerning the right price(Abrate, G, Fraquelli, G, Viglia, G (2012), Dong, L, Kouvelis, P, Tian, Z (2009), Espinet, JM, Saez, M, Coenders, G. (2003), Yang, Y, Mueller, NJ, Croes, RR (2016)) and the right amount of rooms to put on the market and some concise remarks can be made.

Firstly, when talking about pricing in the context of the revenue manager, a distinction is generally made between strategic pricing and operational pricing. This distinction, which is reported by most of the authors dealing with the subject of our interest, concerns the definition of general prices to be applied in the business environment and the operational application of the prices that must be attributed to the sale of a room daily (Abrate, G, Fraquelli, G, Viglia, G (2012)). Strategic pricing mainly concerns the definition of the available price, which is based on the customer segmentation that the hotel decides to serve. Strategic pricing depends on the category and type of hotel it is implemented. The differentiation of strategic pricing depends on the market segment in which the hotel wants to position itself. A 7-star luxury hotel will, for obvious reasons, have a very different strategic pricing from a two-star boarding house. Strategic pricing concerns this type of general pricing that transcends the single price applied to the individual customer daily but concerns the market segment that the hotel has decided to attack.

On the other hand, operational pricing is the definition of the daily price that, day by day, is applied to the clientele that comes to the hotel. Operational pricing depends primarily on demand and competition trends. Demand and competition change according to the periods considered within a year. Think, for example, of the periods connected with particular holidays (Mother's Day, Lovers' Day, Father's Day, Easter, Christmas, New

Year's Eve), or specific days of the week (e.g., Saturday and Sunday), or annual periods connected with special events (e.g. repetitive annual conventions, natural events such as the foliage, open-air theatrical events associated with particular national or local festivals, etc.).

Since the main objective of this article is the in-depth study of the indicators connected with the figure of the Revenue Manager of a hotel, we will not dwell in particular on the 8 points mentioned above. Concerning price, however, it cannot be forgotten that, in the first place, in the presence of elastic demand, this is linked to the demand for the product offered. It would be absurd to think of fixing the price without simultaneously fixing the number of rooms we intend to sell. It is evident how the two elements are interrelated (De Oliveira Santos, GE (2016),. Latinopoulos, D (2018), Levin, Y, McGill, J, Nediak, M (2008), Noone, BM, McGuire, KA (2013)).

Granted that price is related to sales quantity, and evident as the price itself (Kuokkanen H, Van der Rest JP, (2022), Arenoe, B, van der Rest, JPI, Kattuman, P (2015) ,Becerra, M, Santaló, J, Silva, R (2013) Vinod, B, Narayan, CP, Ratliff, RM (2009) (Aslam, :, Modarrs M., Sibdri S., (2013), Arenoe, B, van der Rest, JPI, Kattuman, P (2015), Becerra, M, Santaló, J, Silva, R (2013), Liozu, S., Hinterhuber A., (2013), Shieh, HS, Hu, JL, Gao, LY (2014), Rondan-Cataluña, FJ, Rosa-Diaz, IM (2014), Mattila, AS, Gao, Y (2016)) is connected with a series of elements that we can summarise as follows: location (Lee, SK, Jang, SC (2011), Liu, W, Guillet, BD, Xiao, Q. (2014)), image of the hotel provided to third parties, type of service, type of room offered, demographic characteristics such as age, aspects of amenities and complimentary items made available to customers Monty, B, Skidmore, M (2003)), unique attributes of guests belonging to specific categories of subjects (law enforcement, firefighters, diplomatic corps, people connected to ministries or the government of a country, people holding certain public offices, etc.), temporal characteristics of the use of the hotel (Lee, SK, Jang, SC (2011)), and the use of the hotel for the purpose of the hotel's services (Lee, SK, Jang, SC (2011)).), temporal characteristics of room use (daily room use, two-day room use, weekly room use, monthly room use, quarterly room use.), free services that the hotel provides to its guests (e.g. hi-fi service, etc.), type of customer using the rooms (e.g. single customer, customer belonging to a group, etc. (Guadix, J, Cortés, P, Onieva, L. (2010)), affiliation to a group of hotels that provide rewards upon reaching a certain value of purchases (Silva, R (2015), Lin, YH, Huang, K (2015)), competitor behaviour in terms of prices charged to customers(Shy, O (2008)), demand trends (also related to occasional events such as pandemics and terrorist attacks), different view one can have in different rooms (Latinopoulos, D (2018)), and finally the costs of the hotel structure (Cross, R. G., Higbie, J. A., & Cross, D. Q. (2009)). The type of organisation used in the accommodation can also impact sales prices. Indeed, a price differentiation between family-run and non-family-run hotels has been noted (Soler, IP, Gémár, G (2016)).

It is noteworthy that the price charged can be subject to discounting, which, in some cases, becomes a strategic element of the sales policy (Smith, SJ (2016), Hanks, RH, Cross, RG, Noland, RP (2002), Lee, S (2016), Mun SG., Park S., (2022)).

Regarding the correlation between price and optimal quantity to place on the market (Liu, PH, Smith, S, Orkin, EB. (2002) Noone, BM (2016), we refer the reader to the following paragraphs in which we will address the issue of Room Division Revenue Manager indicators.

Regarding the second point above (right customer) Ivanov (2014) rightly points out that “not all customers are equally profitable for the hotel. Some of them are too costly to serve, i.e., they may have too high requirements which the hotel could not easily and profitably meet, while others are willing to pay too low prices which could hardly cover the hotel's expenses. The 'right' customer is a debatable concept from a marketing point of view but could be associated with the target market segment which has been identified by the hotel's marketing manager and whose requirements are taken into consideration when preparing the product of the hotel. The concept of the 'right' customer calls for the hotel to use various marketing techniques in order to attract the customers which it could properly and profitably serve and deny accommodation for the rest. Hotels, for example, put minimum stay requirements during specific busy periods (e.g. during fairs, exhibitions, world championships) so that they dissuade transit one-night stays in favour of more profitable longer stay customers.” On this point, see also Roberts, DR (2003).

With regard to the right market segment, as we have already had occasion to point out previously, this is a strategic decision that tends to be taken when the hotel structure is established (Abrate, G, Capriello, A, Fraquelli, G (2011), Espinet, JM, Saez, M, Coenders, G. (2003), Espinet, JM, Saez, M, Coenders, G. (2003)). it may happen, however, that the market segment the hotel targets may change over time after having made convenience calculations related to the various market segments the hotel can attack. Generally speaking, it is

rather difficult to move from one segment to another without this being followed by a hotel restructuring. If a hotel starts its activity trying to enter the medium quality segment and later decides to enter the luxury segment, it is evident how the transition requires a series of very deep and costly restructuring of the hotel structure, staff organisation and services offered. If in fact the location cannot be moved, everything else can, in theory, be subject to an up-grade that will be all the more elevated and, consequently, costly, the more the hotel decides to attack a very high-end market segment. The choice of the market is therefore fundamental to be correct at the start of the life of the enterprise. There is nothing to prevent this from being changed later, but the entire management and ownership of the hotel structure must be aware of the costs that such a change causes in the company accounts. And it should be noted that among the costs must also be considered the potential closure of the hotel for several months if the architectural renovation of the hotel structure requires deep and considerable engineering and architectural interventions. The architectural modification of the structure in fact generally requires the closure of the hotel itself for a period that is usually quite long. The well-considered choice of the market segment in which to enter at the beginning of the hotel's life is therefore fundamental to avoid very high costs for the hotel to move from one segment to another of higher quality. It is easier and easier to move from a high-quality segment to a medium quality segment. It should be noted, however, that in this case many business costs that cannot be suppressed will not have a corresponding profit and will therefore be costs that the hotel will have to bear anyway without being able to count on an adequate return on the service offered (Becerra, M, Santaló, J, Silva, R (2013), Becerra, M, Santaló, J, Silva, R (2013), Espinet, JM, Saez, M, Coenders, G. (2003), Tsaur, SH, Tzeng, GH (1996), Guo, X, Ling, L, Dong, Y. (2013), Png, B, Song, H, Crouch, GI. (2015)).

Point no. 4 concerns the so-called right time. When reference is made to the so-called right time, the focus is on the timing of sales communication. In general, there is constant marketing communication over time in all hotels, whether low or ultra-luxury. This marketing communication could be described as 'ordinary', i.e. implemented undifferentiated throughout the year. However, there are times of the year when marketing communication is required and must be carried out at the right time. Timing is a highly significant concept in the context of hotel revenue management. Indeed, the same offer could lead to totally different results depending on the timing with which the communication is implemented. Consider, for example, any annual event. Let's assume we are referring to the Easter holidays. Let's imagine that marketing communication refers to a particular discount extra service exceptionally. The timing of the marketing action is crucial. If the marketing communication relating to the Easter holidays is made too early or too close to this holiday, the marketing activities will be practically null. Therefore, identifying the right timing is extremely important and certainly falls within the remit of the Room Division Revenue Manager. It should emphasize that this timing is not the same for every annual event. If a specific timing can be assumed for a week or so, for festivities lasting one day, such as Lovers' Day, Mother's Day or Father's Day, the timing must drastically change. The task of the Room Division revenue manager is also to identify the so-called right time to implement marketing communication related to room sales at certain times of the year. As has already been pointed out, an error in this timing can alter the company's results and prevent the achievement of the profitability objectives that the hotel has set out to achieve.

Point No. 6 concerns the right distribution channel for room sales (De Oliveira Santos, GE (2016), Espinet, JM, Saez, M, Coenders, G. (2003), Vinod, B, Narayan, CP, Ratliff, RM (2009), Tsaur, SH, Tzeng, GH (1996), Mauri, A, Minazzi, R (2013)). It must also implement the determination of the correct distribution channel for room sales and the action of the marketing manager of the accommodation facility. The multiplicity of distribution channels, which is increasing more and more thanks to the new IT tools made available to businesses, means that choosing the best channels that can allow the most significant number of customers to be reached is a fundamental strategic element. Even those of medium-low quality, all hotels now have access to several distribution channels. This is the only way to reach the critical mass of customers that allows the hotel to be filled.

Alongside travel agencies and tour operators, mention can also be made of the channels that are now applied by any type of business such as web advertising, messages via social media and the use of other IT channels which, at relatively low prices, make it possible to reach an extremely high number of potential customers (Stringam, BB, Gerdes, J (2010), Guo, X, Zheng, X, Ling, L. (2014), Ling, L, Guo, X, Yang, C (2014)) as we have already had to point out, also this. Must be managed simultaneously by the management action of the Room Division Revenue Manager and the Marketing Manager even if the two figures seem to

have completely separate and not intersecting decision-making levers. This is only the result of a highly superficial reading of the management actions that the two managers must perform. Therefore, the choice of distribution channels must be implemented by standard agreement between the Room Division Revenue Manager and the marketing manager, even though this decision may not seem appropriate to the marketing manager. In reality, however, the managerial actions of the two managers must be carried out in an interrelated manner so that the effectiveness of both actions can be maximised and can lead to the simultaneous maximisation of the company's profitability and at the same time the financial equilibrium of the accommodation facility. In addition to this, the shared action between the Revenue Manager Room Division and the Marketing Manager, also concerning the choice of product distribution channels, will make it possible to improve the operational performance indicators illustrated in the following paragraphs.

Point No. 7, the right product (Abrate, G, Fraquelli, G, Viglia, G (2012), (Baker, T, Murthy, NN, Jayaraman, V (2002), Espinet, JM, Saez, M, Coenders, G. (2003), Cross, R. G., Higbie, J. A., & Cross, D. Q. (2009), Yavas, U, Babakus, E (2005), Lee, SK (2015)), represents one of the essential points of business decisions in the context of hotel facilities. Ivanov (2014) points out that “the night product is determined by both the customers and the hoteliers. It IS the product that a) delivers value to the 'right' customers by satisfying their needs, wants, requirements, b) reflects the customer's willingness to pay, and c) is profitable for the hotelier. It is useless to offer services and amenities in the hotel that do not fit the requirements of the target market segment, or offer services/amenities which these customers could not afford to buy or the hotel cannot provide profitably..... The **benefits** provided by the hotel can be numerous - rest and relaxation, tranquillity, convenience, enjoyment, ego enhancement, saving money, meeting other people, spending time with the family, adventure, fulfilment of a dream/fantasy, etc. The more the benefits, the higher the gross value of the product. Benefits are created by the hotel product attributes and are one of the bases for market positioning of the hotel ... The attributes may be divided into tangible and intangible:

*Tangible hotel product attributes - location, hotel facilities, room amenities, room view, design of the hotel, colours, odour, space utilisation, etc.

*Intangible hotel product attributes – service mindedness of the personnel (helpfulness, responsiveness, friendliness, courtesy), speed of the service, service personalization, safety, cleanliness, atmosphere, etc.

Tangible product attributes are easy to copy by competitors. That's why they are seldom sources of a sustainable competitive advantage of the hotel. Emphasis should be put on the intangible attributes as they are more difficult to imitate. The marketing manager communicates the product attributes to the target markets to form in them expectations about the benefits guests will gain from booking in the particular hotel, but we should not forget that 'buyers buy benefits, not attributes' ... - they do not care about the room itself but the relaxation it provides.

For each hotel service the marketing manager may develop a 'product attributes- product benefits' matrix showing the relationships among them. Such a matrix helps the managers identify the key product attributes and excel in their provision.... Counteract the process of commodification of the hotel product is through its differentiation from competing products and redefining the benefits it offers.

Developed at the end of the 1990s..... the concept of *experience economy* gained popularity in the tourism and hospitality industry as well.... Experiences are perceived as products that are different from goods and services. Pine & Gilmore (2011: 17) emphasize that 'experience offerings occur whenever accompany intentionally used services as the stage and goods as props to engage an individual. Whereas commodities are fungible, goods tangible, and services intangible, experiences are *memorable*' (Italics in original).

In order to be competitive, the firm should offer positive, sensational, memorable, and long-lasting experiences, which stimulate the customers to talk about them and to repeat their purchases. Experiences are the basis of the entertainment business - theme parks, rock concerts, movies, virtual reality of the video/online games, kids' birthday parties (at McDonald's or specialized kids' clubs), etc. Experiences do not result in the ownership of something- the customer 'buys' memories, which justify charging a higher price for 'participating' in the experience. Company employees create personalized services and influence the emotions of the guests. A key moment is the participation of

the customer in the experience delivery process, i.e. he is transformed into a 'prosumer' (producer + consumer) - the customer is simultaneously a consumer of the experience and an actively engaged participant in its staging. The design of the service experience requires that all elements of the company product and service delivery process be coordinated -the stages of the service delivery process, the level of customer participation in the service process, his interactions with other customers and employees, the atmosphere and physical environment of the hotel, the employee uniforms, the restaurant menu, the usage of all five senses to communicate the experience message (the value) to the customer.

In the hotel industry, the adoption of the experience economy philosophy leads to the development of experiential hotel product concepts. Table 10.4 provides multiple examples of different degrees of application of the experience economy philosophy adopted by hotels in various destinations worldwide. Experience effect is achieved by 1) unique design and shape of the hotel building, its location, specific target market segment, services, specific service delivery process, animation programme, etc.“

Point No. 8, concerning the determination of the optimal marketing mix, arguably identifies one of the main points of action of the Room Division Revenue Manager (Becerra, M, Santaló, J, Silva, R (2013), Vinod, B, Narayan, CP, Ratliff, RM (2009) Vinod, B, Narayan, CP, Ratliff, RM (2009)).

In our case, the Division and the Room Division and, therefore, the Revenue Manager Division include, among its numerous tasks, the determination of the optimal marketing mix (Becerra, M, Santaló, J, Silva, R (2013), Espinet, JM, Saez, M, Coenders, G. (2003)). When reference is made to the optimal marketing mix, it is meant to identify the product sales mix that maximises the profitability of the Division under consideration. When the Revenue Manager Room Division identifies the quantities of rooms to be sold and the prices to be applied (Maier, TA, Johanson, M (2013)), he cannot help but consider the consequences of his choices in the income and financial level. Indeed, it is inconceivable that through the application of mathematical formulas based on historical data modified with current information one can identify the quantity of rooms to be sold, the type of rooms to be sold, and the price range to be implemented without this decision being evaluated from a profitability point of view. In general terms, it is easy to state that choosing the optimal marketing mix should fall on the most profitable sales composition for the accommodation facility. This is an obvious statement and one with which everyone can logically only agree. The problem is twofold: firstly, it is necessary to be able to make correct calculations of the elements involved in this decision. Secondly, it is essential to be able to interpret the data thus determined. Knowing how to calculate the costs and revenues associated with Room Division and being able to analyze the resulting data may appear to be trivial, simple operations with an obviousness that does not require any particular business economics expertise in implementing them. Nothing is more erroneous and misleading than this. The calculation and interpretation of such data will be analyzed in the next section, specifically in paragraph 2A) Room Division performance in terms of contribution margin falls within the scope of determining the Room Division Revenue Manager's profitability indicators.

The 8 points considered above identify, in essence, the actions that the Room Division Revenue Manager must implement so that the accommodation facility can maximize effectiveness and management efficiency. To be able to plan correctly and to be able to verify the objectives achieved, it is necessary to identify a grid of quantitative indicators that make it possible to highlight planned values, actual values, and a comparison between planned and actual values. These quantitative data must also be accompanied by qualitative elements that will complete the judgement on the effectiveness and management efficiency of the hotel structure. There is no doubt, however, that the determination of quantitative indicators is indispensable in the forecasting phase (Abrate, G, Fraquelli, G, Viglia, G (2012). Pereira N.L, (2016)) as well as in the step of determining the objectives achieved and, finally, in the phase of comparing the goals set and the values actually performed. These indicators can be divided into three broad categories of indicators:

- 1) Income ratios
- 2) Financial ratios
- 3) Performance ratios.

Since the objective of this article is to focus attention on the management activities of the Room Division Revenue Manager, it is evident that these indicators will concern this professional figure and thus the part of the hotel identified by the Room Division. The following paragraphs will analyse the indicators mentioned above in a particularly analytical manner.

Indicators, be they profit, financial or performance indicators, play a dual management role:

- A) indicating the objective to be achieved by the Room Division Revenue Manager
 B) assessing the consequences of the management actions implemented.

Indicators, therefore, have a dual value: programmatic and final.

Ex-ante, the indicators will represent the synthetic objectives to be pursued. Ex-post, they will indicate the goals achieved. Only the data comparison can provide helpful information to the company management to understand the degree of achievement of objectives. The analysis of the various parts of the indicators will also provide the analytical causes of the reasons for which the goals were or were not achieved, highlighting, at the same time, also the management elements that show trends opposite to the overall direction of the indicator (e.g., in the presence of a negative movement of an indicator, one can identify the elements that, despite this, have had a management improvement, and in the presence of a positive trend of a ratio of aggregate, one can identify the management elements that were managed worse than the data of the previous years.

USEFUL INDICATOR IN THE ACTIVITY OF THE ROOM DIVISION REVENUE MANAGER



2) Profitable ratios for Room Division Revenue Manager

A) Room Division performance in terms of contribution margin

As we have already had to point out, the action of the Room Division Revenue Manager must be aimed at maximising the profitability of the section of the hotel connected to that Division. To avoid misunderstandings, it is necessary to understand both the method of calculating the costs and revenues related to Room Division and the interpretation that the data resulting from such calculations must have on the part of the company management. Stating that it is necessary to maximise company profitability is an overly generic and obvious phrase that, in reality, conceals considerable theoretical pitfalls. To this end, to avoid incorrect interpretations and, consequently, the taking of wrong decisions, it is necessary to understand what is meant by maximising corporate profitability fully. Furthermore, it is essential to understand what should use data to understand the management actions that involve such maximisation (Cheng, CK, Li, XR, Petrick, JF. (2011), Chung, KY (2000), Chung, KY (2000), Chung, KY (2000), Chung, KY (2000))

To provide a complete explanation of the concept of profitability of a business division, it is necessary to make a brief introduction to the typology of business costs (Shieh, HS, Hu, JL, Gao, LY (2014)) and the characteristics of revenues that can be assigned to the various sectors of the business division. This brief overview of the typology of the accommodation facility's costs and the gains of the different Divisions present in a hotel accommodation facility appears to be an essential operation for understanding the revenue indicators that the Room Division Revenue Manager must set himself as objectives to achieve. As noted later, terms relating to company costs are often misunderstood. This serious problem can lead to the identification of erroneous data and the misinterpretation of values obtained from the aggregations made based on wrong cost concepts.

It is for this reason that we deem it indispensable to develop a brief introduction on the costs that a hotel accommodation facility may incur and the revenues that such a facility may have because, in the absence of such a brief overview, the terms used may be subject to misunderstanding in interpretation or erroneous quantitative calculations.

Determining the cost of company products (goods and/or services) is often one of the main objectives of those who perceive the need to implement a control system. Understanding, both at the planning level and in actual terms, how much the cost of what the company offers to the market amounts to and how it is structured identifies, therefore, a fundamental step in the creation/optimisation of a system to support managerial decisions (Abrate, G, Fraquelli, G, Viglia, G (2012), Mishan E.J., Quah E., (2020) Khan A., (2022).

We intend to refer to the relevant issue concerning the correct interpretation of the quantitative data determined due to the calculation procedure chosen to identify the product cost. As will be highlighted in the

following pages, the difficulty of calculating this value is combined with a different but interrelated problem. In many entrepreneurial realities, the moment of interpretation of the accounting values is considered less relevant or more 'obvious' than the moment of determination of the aggregates on which the attention of those who manage/use the control system is focused. Such behaviour causes severe consequences at the income and financial levels. Attributing an incorrect meaning to a value means, in essence, invalidating the entire process of determining the accounting data. In this paragraph, however, we intend to focus on the problems of calculating product costs. We refer the reader to the following section for any critical considerations regarding the correct use of this information.

To understand the concept of product costing (Eisner H., (2021), it is necessary, first of all, to point out how, in the context of hospitality establishments, it is appropriate to proceed according to cost through the traditional procedure and not using the application of Activity Based Costing. In the hotel sector, ABC leads to the determination of activities that often overlap with the responsibility centres to which the traditional cost methodology refers. And where centres and activities do not perfectly overlap, the activities identify information elements that are less informative than the responsibility centres, generally distinguished from the business sectors (Room Division, F&B Division, Minor Operating Department). For this reason, in the following pages, we will follow the traditional methodology for determining departmental costs.

To begin with, it is necessary to briefly illustrate the various categories under which costs can be classified. In particular, at the operational level, it is worth emphasising the differences between:

- 1) variable, fixed and semi-variable costs
- 2) special and common costs

These classifications do not exhaust the theoretical panorama of potential logical categories according to which it can allocate costs from an operational point of view. However, other varieties are of no use; for this reason, it has been decided to illustrate only the three 'categories' mentioned above.

1) Variable, fixed and semi-variable costs

One of the most relevant classifications for determining product yield and the calculation of centre, processing and product costs is the contrast between fixed and variable costs.

This division is rooted in the analysis of the variability of costs concerning even limited changes in the company's production.

Variable costs can be defined as those costs whose amount varies in proportion to changes in production volume. Variable costs, therefore, differ even when only one unit of production changes. On the other hand, fixed costs have the characteristic of not changing with changes in production.

This dichotomy is only and exclusively valid from a short-term point of view, i.e. in a context characterised by a pre-established production capacity and, therefore, not adjustable. For this reason, we speak of fixed and variable costs within the so-called 'relevant range'. The relevant range represents, in essence, the consideration of a short-term time horizon with a given production capacity. Only in this case can one speak of 'fixedness' and/or 'variability' of costs.

Focusing on the medium to long term, on the other hand, inevitably implies the variability of all company costs. In the long run, every managerial choice (including, for example, decisions concerning the size of the company, the production capacity to be activated, etc.) presupposes that it can decide the costs about it without any constraints whatsoever (with the exception, of course, of financial constraints). In this context, production capacity does not represent a constraint but even constitutes one of the primary decision-making choices. Consequently, for example, the depreciation of a building and/or furniture and/or equipment and/or other fixed assets, from a typical fixed cost in the short term, becomes a perfectly variable cost in a long time since this value depends on the size and characteristics of the fixed assets to be used. In the long-term view, elements that are the subject of decision-making choices by managers and, therefore, by definition, must be considered modifiable, i.e. variable.

This, however, distorts the perspective in which the dichotomy 'variable costs' vs 'fixed costs' is framed since the vision within which one operates is long-term and no longer short-term.

From the above definition, it can be understood how variable cost overall variable is but unitarily fixed while fixed cost is overall fixed and unitarily variable.

This makes it possible to state that a negative income component is variable when it can calculate the unit cost by applying the following function:

variable unit cost = $q \cdot \text{Unit Price}$

where:

q = quantity of variable production factor per unit of product

P_u = unit price of the production factor

Within the Room Division, we can identify the following variable costs: amenities, cost of washing towels, cost of washing sheets and pillowcases, and cost of cleaning staff who are assigned a maximum time within which they must perform all room cleaning operations.

In the commercial sphere, there is the variable cost of the commission paid to third party sellers (e.g. travel agencies or various intermediaries).

With reference instead to the fixed costs, the share concerning the unit of product derives from a division of the total value by the production quantity (or sold in the case of no stock as in Room Division)

Concerning the Room Division, the following special departmental fixed costs can be identified: housekeeper, furniture depreciation, bathroom plumbing element depreciation, essential heating fixed costs (e.g. floor heating from 11 p.m. to 5 a.m.), etc.

There is often a misidentification of variable and fixed costs within the company, especially concerning the negative income component of employees.

The variability of this cost is, in fact, incorrectly identified with the duration of the employment contract stipulated with the employee (fixed-term or open-ended) and/or the possibility of dismissing redundant staff, if necessary. According to this distorted view, employees give rise to fixed costs whenever they are employed indefinitely in the company, and the possibility of unilateral termination of the employment relationship by the company is practically non-existent. Instead, they give rise to the incurrence of variable costs whenever their contract is a fixed-term one.

All this stems from an incorrect and distorted notion of the variability of costs. Variable is not the cost that is sustained two months a year or that can be eliminated if one intends to expel a person from the company organization but is the cost that varies proportionally to the change in production and for which, therefore, it can identify a clear and quantifiable connection between the input of resources employed in production and the output of the activity performed.

The distinction between variable and fixed costs is a fundamental step to be able to carry out severe and prudent planning (Hussey R., Ong A., 2018), Pong C., Falconer M., (2006)). Carrying out this activity presupposes the ability to reliably determine the amount of costs that can be linked to the various levels of activity that the company can theoretically carry out. Since there are variable and semi-variable costs in addition to fixed costs, different levels of business activity correspond to varying amounts of negative income components. Planning also means choosing the most cost-effective level of activity for the enterprise.

As we shall see in the following pages, this decision cannot disregard the consideration of the costs interrelated to each production option.

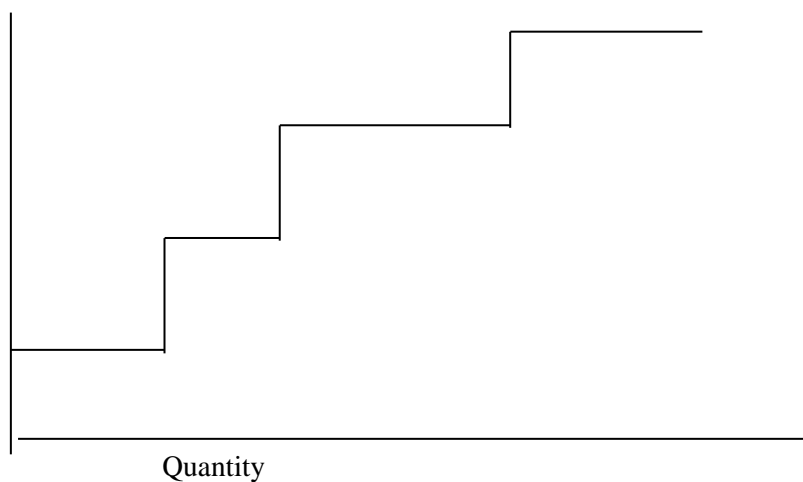
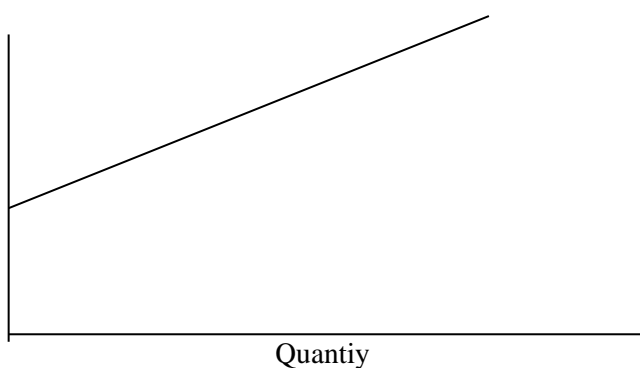
Identifying the negative income components associated with each hypothetical production level gives rise to what is commonly referred to as a flexible budget. This statement shows the various production/sales quantities against which the costs associated with each production hypothesis are made explicit. Correctly identifying fixed and variable costs is a fundamental step for the values specified in the planning phase to be meaningful. Since the determination of the costs referable to each level of production that, hypothetically, the company could realize would represent a highly high expenditure of energy, it is frequent to opt for the construction of a document in which only one level of production is made explicit - that is, the one that is intended to be implemented - to which the various costs connected to it correspond. Such a document can be constructed to clearly understand the mathematical function linking variable costs to the different production levels. To the values thus determined (concerning variable and semi-variable costs) must naturally be added the amount of fixed costs which, by definition, is independent of the volume of activity developed. This simple

calculation allows the determination of total costs, the incurrence of which is implicitly linked to the fact of producing a certain quantity of goods and/or services (Hanioglu M.N, (2022)).

As shown in the following pages, the determination of these values (total costs connected to production volumes differing from those indicated in the budget) is an indispensable step for management control to be carried out effectively. It can quickly identify the determination of costs associated with different production levels than that explicitly stated in the budget by applying the mathematical function that determines the link between production and variable costs. For this reason, the correct identification of variable/semi-variable costs and the determination of the function linking these costs to the various production volumes must be interpreted as two fundamental elements in the complex business planning activity.

Alongside the contrast between fixed and variable costs, there is a third category of costs in the business environment, which probably represent the most significant set of costs (Avi, 2017). These costs are defined as semi-variable as they are characterised by the presence of a variable share and a fixed share. The allocation of the fixed portion from the variable part is a technical operation that is indispensable for determining the product's performance.

Semi-variable costs can belong to two categories, the first having a fixed cost quota clearly and visibly separated from the variable cost quota, the second being characterised by a so-called 'stepped' cost. In the latter case, the cost, instead of presenting a distinct fixed and variable share, is characterised by a trend that for small quantities identifies a fixed cost which, whenever a specific quantitative limit is exceeded, undergoes a sudden increase to a higher cost level. Graphically, the two semi-variable cost categories can be represented as follows:



From the two examples above, it is immediately apparent that the division of the total cost into fixed and variable parts in the first hypothesis is elementary. The cost function allows the immediate determination of the two parts making up the full value.

An example of this cost category in hotel structures is the total water cost: the fixed part depends on the fixed fee that the hotel must pay annually to the company that manages the water section in the area; the variable part is connected to the amount water used by customers.

On the other hand, the difficulty is considerable when the focus shifts to costs with a "stepped" trend. In the hotel sector, in the Room Division, the costs of the floor staff performing cleaning and housekeeper assistance activities represent an example of this type of stepped semi-variable costs.

Even from a purely visual point of view, it can be understood that any division of the total cost into variable and fixed parts is a mere "accounting fiction" since, precisely because of the particular progression of the cost, an objective division, with the associated identification of a variable unit cost, is impossible to determine. Therefore, any separation between fixed and variable share is the result of a subjective subdivision that, inevitably, reflects, only in part, the actual cost progression.

It can affect the apportionment of the fixed portion of the variable part of semi-variable costs using operational-practical systems. In the case of gas, water and electricity utilities, for example, the allocation of costs could, purely hypothetically, be carried out in a precise manner, e.g. using the installation of meters that allow the analytical identification of the cost attributable to the occupation of, e.g. individual rooms and the cost relating to the operation of the common parts of the enterprise.

In allocating these values, however, it must be borne in mind that balancing costs and benefits must be an indispensable objective for those who manage an enterprise. Implementing such a cost allocation method requires a cost that exceeds the benefits obtained by separating the variable portion from the fixed amount. For this reason, it is believed that the distinction between the two parts of the overall cost must be made by applying mathematical-statistical methodologies that allow, with reasonable approximation, to identify the part proportional to the level of activity carried out by the company and that which is not related to the volume of production implemented.

There are mainly two mathematical methodologies that can use for this purpose:

- 1) minimum-maximum method
- 2) statistical regression method

Concerning the minimum-maximum method, it should note that its simplicity of application necessarily entails obtaining a less precise result than that obtainable with the statistical regression method. Therefore, it must choose between the two methods because the minimum-maximum way is more straightforward but less refined than the one using statistical regression, even though the results obtained are perfectly usable to allocate the fixed and variable share of the semi-variable costs. Despite this, the results obtained are not tainted by an approximation that could cause them to be considered unreliable.

To illustrate the calculation methodology of the two method variants, the following example is proposed:

Assume that, in the firm Alfa, there is a semi-variable cost with the following pattern:

| production | Total cost |
|------------|------------|
| 100 | 2.000 |
| 110 | 2.200 |
| 130 | 2.700 |
| 150 | 2.900 |
| 180 | 3.300 |
| 190 | 3.400 |
| 210 | 3.800 |
| 220 | 4.000 |

The method of minimum-maximums requires the following calculations:

| | Production | Total cost |
|--|------------|------------|
|--|------------|------------|

| | | |
|---------------|-----|-------|
| Minimum value | 100 | 2.000 |
| Maximum value | 220 | 4.000 |
| Difference | 120 | 2.000 |

$2.000/120= 16,666$ this value represents the variable unit cost the cost function is as follows

Total cost = fixed costs + total variable costs

With reference to the minimum quantity (but the result would not change when considering, for example, the maximum quantity), the function takes the following values:

$$2.000 = \text{fix costs} + 16,666 \times 100$$

$$2.000 - 1666.66 = \text{fix costs}$$

Therefore, fixed costs amount to €333.4

The general cost function takes the following form

$$\text{Total cost} = 333.4 + 16.666 \cdot \text{quantities}$$

Summarizing therefore by means of the minimum-maximum method, the following values were found:

Fixed cost = 333.4 euro

Variable unit cost = 16.666 euro

The application of the statistical regression line requires the application of a more complex method, which consequently guarantees more correct results.

The equation of the interpolating line is as follows:

$$y = ax + b$$

y = total costs

a = unit variable cost

x = quantity

b = total fix costs

To solve the equation characterised by two unknowns, the following system must be used:

$$\begin{cases} \sum y = bn + a\sum x \\ \sum xy = b\sum x + a\sum x^2 \end{cases}$$

n = number of observations made

| number of observations made | Production X | Total cost y | X ² | XY |
|-----------------------------|--------------|--------------|----------------|-----------------|
| 1 | 100 | 2.000 | 10.000 | 200.000 |
| 2 | 110 | 2.200 | 12.100 | 242.000 |
| 3 | 130 | 2.700 | 16.900 | 351.000 |
| 4 | 150 | 2.900 | 22.500 | 435.000 |
| 5 | 180 | 3.300 | 32.400 | 594.000 |
| 6 | 190 | 3.400 | 36.100 | 646.000 |
| 7 | 210 | 3.800 | 44.100 | 798.000 |
| 8 | 220 | 4.000 | 48.400 | 880.000 |
| Total 8 | Total 1.290 | Total 24.300 | Total 222.500 | Total 4.146.000 |

$$24.300 = 8b + 1.290a$$

$$4.146.000 = (24.300 - 1.290a)/8 + 222.500 a$$

b = 503,98 total fix costs

The cost function is therefore as follows

$$\text{Total cost} = 503.98 + 15.7118 x$$

Comparing the results obtained from the two methods, it can be seen that:

| Method used | Unit variable cost | Total fix costs |
|-------------------------------|--------------------|-----------------|
| Minimum-maximum method | 16,66666 | 333,4 |
| Statistical regression method | 15,7118 | 503,98 |

As can be seen, the results are not equal even though there is some consistency between the data obtained. Therefore, although the minimum-maximum method does not guarantee the best obtainable results associated with applying statistical regression, the use of the minimum-maximum process allows approximate values to be identified for the interpolating line data. Therefore, the simplicity of the method does not invalidate the results obtainable by simply comparing the minimum value to the maximum value.

To compare the results obtainable through applying the method of minimum-maximums and statistical regression, observe the following example. The variable unit costs and fixed costs available through the application of the two methods are shown.

2) Special and Common Costs.

The cost classification does not end with considering the variability of negative income components concerning the production carried out. For the accounting-decision-making tools to be fully comprehensible (Drury, D., (2020)), it is, in fact, also necessary to illustrate the difference between common and special costs.

Company costs are defined as special (or specific) if they can be allocated objectively and thus without the need for questionable attributions to a particular company department/product.

Take, for example, the labor costs of the housekeeper. Such costs are special to Room Division. For such factors of production, the theoretical problem of allocation does not arise. It is evident how, since the elements are used in a particular department/centre, the cost of the factor must be allocated to that specific user sector.

While many costs are specifically referable to a particular department, there are also many negative income components that, on the contrary, affect several departments. These costs are defined as common in that they concern, at the same time, an assortment of objects (e.g. administration costs concerning both the Room Division and the Food & Beverage Division and, finally, the Minor Operating Department). Common costs are subdivided, in turn, into specialisable and non-specialisable costs. The first mentioned category consists of costs which, although lacking a direct connection with the departments/products, are attributable to the various objects of interest through sufficiently objective parameters. Consider, for example, the case of energy. Suppose by hypothesis; counters were installed in the company, which allow the exact amount of input consumed by the various departments to be determined. In that case, the cost associated with energy consumption could be included in the specialised costs.

However, there are numerous examples of negative income components that are attributable to the various departments only due to the use of subjective and thus questionable parameters. Depreciation of buildings, general manager's salary, advertising, voluntary insurance, etc., are typical examples of such costs. The attribution of these income elements to specific departments and/or products could only occur by resorting to subjective criteria. Therefore, these costs are part of the so-called non-specialisable common costs, i.e. in the category of costs that, leaving aside more or less discretionary 'rebates', cannot be allocated in a precise manner between the various company areas since they concern the company considered in its entirety and wholeness. The reader is referred to the following paragraphs for a practical and theoretical exemplification of the allocation of common costs.

To conclude these brief considerations, it should point out that the division between special and common costs is relative in that it is strictly dependent on the object taken into consideration. It is evident that as the size of the object increases, the quantity of special costs also increases proportionally against a corresponding reduction in common costs. This implies that a cost that identifies a special negative income component for an object may become common if the analysis perspective changes. If, for example, the reference object was the entire company, each cost would become special and, consequently, would cancel the category of common costs.

Simplifying the reality for the sake of clarity (and, consequently, leaving it to the analyst/controller to transpose the following concepts into the variegated company realities), it is possible to state that, in general terms and, leaving aside the consideration of whether the single cost is specific to job order or common to the entire process, the unit product cost inclusive of all costs (full cost) derives from the summation of three basic elements (Khan A., (2022))

- 1) the variable unit cost
- 2) the unit share of special fixed costs
- 3) the unit share of common fixed costs

To determine the full cost, it is appropriate to keep the three parts of the full cost separate. To develop all the analyses useful for the implementation of an integrated control/programming system, the intermediate results are indispensable.

As far as the variable unit product cost is concerned, it must remember that this value is represented by the summation of the variable unit costs present in the good of interest. If, for example, the business product whose cost is to be calculated were a room, the variable unit cost of the bag would be derived from the summation of each variable factor identifiable in the good. The variable cost of the room would then include, for example, the variable cost of washing sheets, the variable cost of cleaning the room, the variable cost of washing towels, amenities cost, etc..

From what has been said up to this point, it can be understood how the variable unit cost of the product can be considered an objective datum since the values determining the cost are not subject to subjective evaluations by the analyst.

Concerning the unit share of the special fixed costs, it may emphasize that also, in this case, the value derives from the summation of the unit share of the special fixed costs intended to be charged to the product.

If, for example, the special fixed costs associated with the room were: the depreciation of the furnishings, the cost of the housekeeper's staff, , the cost of the depreciation of the plumbing parts of unit share of the special fixed costs would be the sum of the unit shares of each special fixed cost mentioned above.

The unit share of special fixed costs is derived from the distribution of the special fixed cost by the quantity of the object of interest produced (which, in the case of an accommodation facility, since it cannot store the room, is equal to the sales quantity) during the period considered.

The unit share of special fixed costs, on the other hand, is a cost that can be defined as 'relatively objective' in that, while on the one hand the special fixed costs are directly linked to the production of that particular good, on the other hand it must be observed how the calculation of the unit share derives from a 'fictitious' operation of apportioning a total cost to a quantity.

Determining, for example, the unit share of the depreciation of a piece of machinery used to manufacture a specific good is an operation that, while considering a cost pertaining exclusively to the product in question, represents an accounting operation that identifies a unit value that is not completely objective because it derives from an allocation made on paper 'at a desk'.

Nevertheless, since the starting cost is a cost attributable exclusively to a product, the unit share of special fixed costs has a characteristic of relative objectivity.

Finally, the situation changes entirely concerning the unit share of common fixed costs. In this case, the division is carried out obligatorily, using subjective parameters since the overall cost, by definition, concerns a diversity of goods/products/departments/activities whose division, consequently, cannot be carried out automatically and objectively.

The sum of the three parts identified above is referred to as 'full cost' or 'full cost'.

Therefore, the concept of cost includes not only production costs, variable and fixed, but also negative components of a different nature, such as administrative costs, overheads, and commercial costs. In some cases, there is even the determination of a product cost, including financial and tax charges. However, full cost includes only costs of a characteristic nature and excludes all costs connected with non-characteristic management. If, at times, there is an allocation (somewhat arbitrary) of financial costs, however, the possibility of 'passing on to

the product of costs that are not characteristic by definition (such, for example, capital losses and contingent liabilities) is permanently excluded.

Therefore, with the traditional methodology, costs must be localized in the various centres and then subsequently allocated to the individual products.

The delimitation of the centres of responsibility serves a twofold purpose: on the one hand, the precise identification of the technical and organisational characteristics of the processes that make up the complex business combination and, on the other, the accurate definition of the areas of autonomy of responsibility assigned to each organizational subject.

The determination of the centres is indispensable because it is based on these 'organizational' elements that it can identify the specific organizational methods of deploying production resources, which in turn form the basis for the definition of standard operating conditions.

As we shall have occasion to point out in the following pages, the identification of standard operating conditions presupposes that the centre managers have a certain degree of decision-making discretion since it is only in this circumstance that they can be considered responsible for the resources under attention. If, in fact their action was constrained and therefore not autonomous, we would be faced with non-discretionary elements and, therefore, concerning which responsibilities could not be identified and assigned.

For the determination of standard costs to be carried out correctly, the centres must be defined so that they coincide with a nucleus of activities carried out in a relatively homogeneous manner and whose output can be measured. It is also appropriate that these activity nuclei correspond to organizational units subject to the control of managers. Finally, each manager's decision-making scope is clearly defined to avoid the occurrence of problems due to gaps or overlapping of decision-making powers.

The allocation of costs common to several objects (be they departments, centres, products, services, etc.) to products appears to be particularly difficult.

In synthetic terms, it is possible to state how it can do this by means of two methodologies:

- 1) single parameter;
- 2) multiple parameters.

The difference between these two calculation methodologies is identifiable in using a single apportionment parameter or multiple common cost apportionment parameters, respectively. As an example, let us assume that there are three common costs in an enterprise:

- ▶ hotel advertising which, internally, also has a minor operating department and F&B division
- ▶ salary of the general manager
- ▶ building heating costs

If the single-parameter allocation methodology is applied, it will allocate all common costs to the various centres through a single parameter, e.g. the turnover of the different products and the centre's processes. The use of the multiple parameter methodology, on the other hand, involves choosing the most appropriate parameter for each of the common costs to be allocated in such a way that there is the closest possible connection between the centre to which the costs are allocated and the parameter used.

Again by way of example, since the parameters are by definition subjective and therefore, it is not possible to draw up a list of parameters that can use since these vary according to the situation in the company, it can be stated that advertising could be apportioned among the various products through the parameter of the turnover of each product, building heating costs could be apportioned according to the cubic metres used by the various centres, and finally the general manager's salary, if there is a connection between the time dedicated by the general manager to the sale of individual products (e.g. rooms, F&B and products of the smaller operating departments and their turnover, could be apportioned according to the turnover of the goods placed on the market by the company (Rooms, F&B and products of the smaller operating departments) and the turnover of the same, could be apportioned according to the turnover of the goods placed on the market by the company. As can be seen, especially in the latter case, the parameter chosen, however, might also not fit if, for example, the asset with the highest turnover represents a product whose yield no longer requires any effort on the company's part. Therefore, it could be the case that all managing director steps are directed towards developing

the product with a lower turnover. In this case, turnover would not be the correct parameter for allocating this common cost. If this hypothesis were to occur, it would be necessary to identify another parameter that would make it possible to link, obviously in an indirect manner, the common cost of the general manager's salary to the various products. As can easily be understood, each parameter can be the subject of criticism since the parameter for allocating common costs is subjective and thus potentially the matter of differing opinions by the inherent definition of the term.

The so-called **Net Unit Product Yield (N.U.P.Y.)** can be determined with the above data.

Determining which products to push onto the market identifies one of the most delicate managerial decisions as it directly impacts company profitability.

The question as to which products to favour would seem to have an obvious and automatic answer: the goods/services to be pushed are those that 'yield' the most. However, this correct statement can be subject to misinterpretation from which unforeseeable economic consequences can arise (Miller D, Patassini D., 2022).

From an income point of view, the product to be preferred is the one with the highest return is an obvious statement. What needs to be clarified is what is to be understood, in this specific context, by 'product yield'.

In the preceding pages, the concept of full cost, i.e. the notion of product cost including every negative component of the company's income (excluding specific costs about which it is not appropriate to pass on to goods/services), has been illustrated in great detail.

Based on what has been said so far, it would seem evident that the product yield is determined by the contrast between the unit selling price and full cost. The algebraic sum of the two values gives rise to the so-called Net Unit Product Yield (N.U.P.Y.).

Before continuing our discourse on the concept of product yield, it should recall that when the information needs of managers concern the economic-income side of business management, income always becomes an aggregate on which the directors' attention is polarized. In the sphere of the information flow destined for managers, this value assumes, in fact, the importance of primary importance as it expresses, in a synthetic manner, the wealth produced or destroyed as a result of the performance of a given entrepreneurial activity or part of it.

However, it should emphasise that the notion of income - understood as a synthetic aggregate resulting from the contraposition of revenues and costs - is not univocal.

Assuming that all business costs and revenues obtained in a financial year are the subjects of interest, the value resulting from the algebraic sum of these accounting elements is the business income. However, it would be misleading to regard this notion of income as the only one relevant for decision-making purposes. One need only think, for example, of the hypothesis in which the need for knowledge relates to the company's ability to earn profits in the context of its typical business activity.

Even in such a case, the juxtaposition of negative and positive income components connected to the performance of such management gives rise to the determination of a particular configuration of income: the operating income of characteristic management.

If supplemented by the consideration of costs and revenues that, although not forming part of the typical business activity, derive from asset management and active financial management, this value is transformed from operating income from ordinary operations into operating income tout-court.

On the other hand, the interest of those who determine these values is focused on the business-environment relationship; the choice of income configuration will probably be further different. In such a case, the company's added value will undoubtedly be the cognitive element aimed at those who wish to derive useful information from accounting.

From these brief considerations, it is easy to understand how the concept of income and, consequently, economic performance is characterized by various facets and differentiations, which base their being on the various types of revenues and costs that, hypothetically, can be added together algebraically.

Product yield can also take on various connotations depending on the information that needs to be met.

The net unit yield represents a notion of income attributable to the individual product, which, while useful for understanding the cost-effectiveness of various products, cannot, however, be used to identify the 'most profitable' goods which it is appropriate to push onto the market to maximize company profit.

We will return to the reasons for this assertion in the following pages when we have illustrated some concepts that are indispensable for the reader to understand the real informative scope of the N.U.P.Y..

To demonstrate what has already been expressed, it is necessary to proceed step by step by illustrating general theoretical considerations.

First of all, to facilitate the understanding of specific terms that will subsequently be used, it is appropriate to highlight how an information requirement of relevant interest concerns the capacity of the activity performed to cover the company's fixed costs.

Let us imagine, for example, that a given accommodation establishment has fixed, special and common costs of 100 million euros. The primary objective of this enterprise is to cover its fixed costs. The enterprise can, of course, cover these costs with the amount remaining after removing all variable costs from revenue. For this reason, it can say that the difference between revenues and variable costs represents the amount that contributes to covering fixed costs (Johansson P.O., (2018), Oldam A., Tmokin C., (2020)).

Since the difference between total revenues and total variable costs contributes to covering the company's fixed costs, whether special or common, is called the contribution margin.

It can identify various indicators under the name contribution margin.

We will focus our attention on the Room Division Revenue Manager's target indicators:

a) Unit contribution margin (on this indicator, however, please read the considerations below)

b) Room Division first level contribution margin

The contribution margin, understood as the difference between variable revenues and costs represents a useful, or rather indispensable, cognitive element so that it can make multiple company decisions in full awareness of the income implications of the alternatives being chosen.

The locution used to identify the "sum-value" which is the subject of our interest, containing within it the term "contribution", makes explicit, also from a terminological point of view, the informative function assigned to this cognitive vector which, therefore, can be unequivocally identified in the deepening of the capacity of the activity being analyzed, to contribute to the coverage of fixed costs. From these brief observations, it is easy to understand how the effectiveness of the determination of the margin is drastically reduced if this differential value is determined concerning the entire company. The juxtaposition of all company revenues and all variable company costs leads to an in-depth examination of the ability of the whole company to cover all fixed costs. This information, however, can be deduced clearly and blatantly without the need to divide costs into fixed and variable, from the reclassified financial statement.

If a profit for the year is shown in that document, the company has been able, on the one hand, to cover all fixed costs and, on the other hand, to produce new wealth to a value equal to the income shown. If, on the other hand, the company has incurred a loss, the mere consideration of this value leads to the assertion that the business has contributed to covering fixed costs but has not been able to absorb the full amount of these negative components. Finally, a perfectly balanced financial statement with zero income shows how the company was able to cover its fixed costs perfectly well while at the same time failing to produce new wealth.

The reclassification of the company's profit and loss account 'at contribution margin' can therefore only have the sole purpose of delving into the company's cost structure. As we shall see in the following pages, such information is undoubtedly beneficial in understanding the different impacts of business decisions on the company's overall profitability. In such a context, however, the determination of the company's overall contribution margin loses much of its effectiveness as an accounting tool for economic decisions.

For the usefulness of the margin calculation to be maximized, this value must be identified by reference to partial business combinations. Therefore, the interest of those who determine such margins must be focused not on the company, but the individual products offered on the market, product ranges, individual company departments, etc. This means that the company - on an accounting level - is divided into decision-making and management-relevant areas. The differential values resulting from the contrast between variable revenues and costs about these 'sections' of activity are determined. This makes it possible to understand the capacity of the various company products and/or sectors to contribute to covering the company's fixed costs. Among the multiple alternatives analysed, the managers' choice will naturally fall on the options that contribute most to covering the company's fixed costs.

As will be better understood in the following pages, there are various types of contribution margins depending on the object of focus. Where the focus is on a specific product, the margin is called a unit margin.

If, for example, in the Sweet Hotel enterprise i were the possibility of placing either the Alpha room or the Beta room on the market and the costs/revenues pertaining to these alternatives were as follows:

| | Camera Alfa | Camera Beta |
|---------------------------|-------------|--------------|
| Unit sales revenue | 1.000 | 3000 |
| Amenities type A | (.200) | (900) |
| Amenities type B | (.10) | (50) |
| Direct labor cost | (100) | (300) |
| Other variable costs | (5) | (35) |
| Unit contr. margin | 695 | 1.715 |

Assuming equal sales volumes of the two products or unlimited market potential, management would prefer to opt for the Beta product. It should note that this decision can be taken irrespective of the knowledge of the amount of the company's fixed costs, since both in the hypothesis of fixed costs being lower than the total margin. In the opposite theory, the company would be in favour of alternative B since, in the first case, it would maximise the profit, while in the second it would minimise the loss.

As can easily be understood, the basic assumptions indicated above (infinite market or perfect coincidence of sales volumes of A and B) are, however, unrealistic assumptions at the operational level. For this reason, it must take the managerial decisions we are interested in the light not of the unit margin but the total contribution margin, i.e. the value resulting from the product of the unit margin by the sales volume.

Therefore, the unit contribution margin cannot be used for decision-making purposes precisely because it does not show, on a global level, the product's ability to cover fixed costs. Three 'exceptional' hypotheses allow the contribution margin to be used for decision-making purposes. The unitary margin can in fact, be used for decision-making purposes in the following three cases:

- 1) in the hypothesis of a negative unit contribution margin: in this case unless needs of a strategic nature require it (Becerra, M, Santaló, J, Silva, R (2013), Cross, R. G., Higbie, J. A., & Cross, D. Q. (2009)), the sale of the product is not economically viable because it creates a loss. Indeed, in the presence of negative unit contribution margins, the more one sells, the greater the loss the firm makes;
- 2) if the enterprise is a single-product enterprise: in this case, the unit contribution margin of the only product placed on the market is significant for the economic viability of the product itself;
- 3) if the enterprise finds itself deciding to choose to sell among several goods marked by the exact sales quantities, it is evident that in this case, given the exact quantities sold, the discriminating element is, in practice, the unit contribution margin.

It cannot use the unit contribution margin for decision-making purposes outside the three hypotheses mentioned above. Therefore, for the decisions taken to be economically advantageous, one must move to another concept of margin: an overall margin that considers the quantities sold. This margin is referred to as the top-level contribution margin.

From what has been illustrated above regarding the need for the decision regarding the products to be pushed onto the market to be dictated by the awareness of the immodiability of fixed costs and the need for management to act in such a way as to ensure that (fixed) costs are covered in the best way possible, it is understood that Net Unit Product Yield (N.U.P.Y.) cannot have decision-making purposes but must be "relegated" to satisfying information needs that are not useful, in a direct way, to the identification of the "most profitable" and therefore "most convenient" products for the company.

As noted on the previous page, outside of the three specifically identified hypotheses, it cannot use the unit contribution margin for decision-making purposes. For the revenue manager's managerial decisions to maximize the company's overall profitability, it is necessary to introduce the concept of the top-level margin, i.e. the total margin with sales quantities.

The first-level total contribution margin represents the product of unit contribution margin and sales quantity. It should note that the quantities to be calculated must be sales quantities and not production quantities, as fixed costs are covered not if the company produces goods but if it sells its products/services.

The first-level contribution margin is used to make short-term decisions. In this context, the word short-term has two meanings:

1) the term short-term refers to decisions that do not impact the company structure. Production capacity is taken as given, and by these decisions, we do not mean structural changes to the company, such as the closure of departments, the sale of business units, etc.;

2) the word short also has another meaning: it becomes synonymous with immediate in this context. We intend here to refer to the period when one becomes aware of the information and the time when one has to make the decision. As far as the decision-making aspect of the first-level margin is concerned, it can say that this period practically cancels itself out. In other words, the moment the manager becomes aware of the information; he can, automatically and immediately, make the most cost-effective decision. Later, we will see how there is also a second-level contribution margin in which the decision is not immediate but takes time. This is not the case with the first-level margin where we repeat; it can decide at the same time as the margin is determined.

The first-level margin is used to take, in particular, four significant decisions that are, to all intents and purposes, part of the Revenue Manager's management actions:

A) to accept or not to accept an order: in this case, regardless of strategic decisions that may subvert the logic of short-term revenue maximization, the acceptance of an order depends on whether the margin is positive or negative. It is evident that in the presence of a positive first-tier contribution margin, it will still be advantageous to accept the order since, even if the amount is small, it will cover fixed costs for that same amount. It should be noted that the margin doesn't need to cover the fixed costs because, in any case, should the margin be positive, the choice of accepting the order entails either maximizing the profit or minimizing the loss, both options guaranteeing that the most advantageous decision is taken;

B) choice between several orders: naturally, the choice between several orders will fall on the order with the highest first-order margin. In this case, maximum coverage of the company's fixed costs is ensured with consequent maximization of profit;

C) choice between the decisions to sell high quantities at low prices or limited quantities at high prices: every company generally has to take a significant decision when planning its annual. Here we refer to the hypothesis of goods with flexible demand, predominant in economics.

That is, goods that have the characteristic of seeing demand increase when prices fall and, conversely, of seeing demand decrease when selling prices rise in the presence of such goods, each company must ask itself whether it is appropriate to sell high quantities while keeping selling prices relatively low or whether it is more profitable to limit the quantities sold by raising the price at which the good is to be sold (Abrate, G, Fraquelli, G, Viglia, G (2012)). In general terms, there is no 'best' solution. It all depends on the top-level margins that the two alternatives allow the company to achieve. Therefore, it is necessary to make the various sales quantity/price assumptions and then determine the first-tier contribution margins corresponding to each option. The most favourable alternative will be the one that, naturally, will allow the firm to achieve the highest first-tier margins

D) identification of the optimal sales mix: this decision is taken at the planning stage when deciding on the quantities and sales prices of the various products that the company chooses to put on the market. If, as is the case in most cases, the company is a multi-product enterprise (such as a hotel in which the rooms are diversified in quality), it will inevitably have to identify the optimal sales mix at the planning stage, since, hypothetically, different quantities of the individual goods can be sold at different prices. The identification of the amounts of the particular goods and the most favourable prices is made by determining the total top-level contribution margin for each hypothesis. The optimal mix is the one that guarantees the highest first-tier contribution margin when planning. Therefore, the programming of sales cannot disregard the identification of the values we are interested in since, not always, selling more significant quantities of the product means obtaining better economic performance (Abrate, G, Fraquelli, G, Viglia, G (2012)). If the higher sales of a given product are achieved by sacrificing the placement of other products with higher margins on the market, the policy implemented leads to a reduction in the overall company result. The identification, at the planning stage, of the most economically advantageous mix and the accurate perception of the differentiation of the capacity of the various products to contribute to covering the company's fixed costs, represent two elements of information,

knowledge of which can play a fundamental role in avoiding the taking of apparently profitable decisions from a profitability point of view which, on the contrary, undermine the company's stability and economic equilibrium (Dong, L, Kouvelis, P, Tian, Z (2009).

From the above, it can understand that most business decisions have to be made based on the consideration of the top-level contribution margin. The maximisation of this value entails the consequent maximisation of the characteristic income. In the face of the total modifiability of variable costs, there is a "crystallisation" of fixed costs (always within the so-called relevant range, i.e. under given production conditions). Therefore, the first-level contribution margin represents one of the income indicators that the Room Division Revenue Manager must set himself to achieve. The target can be identified as the absolute value of the margin or as a percentage of the first level margin compared to the Room Division's total revenue.

In summary, therefore, the contribution margin indicators that represent objectives to be achieved by the Revenue Manager are as follows:

***PROFITABILITY INDICATOR EXPRESSED IN TERMS OF THE ROOM DIVISION REVENUE
MANAGER'S TARGET CONTRIBUTION MARGIN:***

1) FIRST LEVEL MARGIN

2) FIRST LEVEL MARGIN AS A PERCENTAGE OF TOTAL ROOM DIVISION REVENUE

At the end of the period considered (month, two-month period, quarter, half-year, year), the actual value actually realised will be compared with the planned figure. From the comparison, it will be understood which goals were achieved and which goals were not achieved by the Room Division Revenue Manager (Cross, R. G., Higbie, J. A., & Cross, D. Q. (2009), O'Neill, JW, Mattila, AS (2006)).

B) Room Division return as a percentage of Gross Operating Profit Room Division GOPRD on total capital invested in Room Division management (ROIRD)

The Room Division's characteristic profitability (Avi, 2019), Fridson M.S. Alvarez F, (2020), Maheshwari S.N, Maheshwari S.K., Maheshwari C.S, (2022) Shim J.K., Sieger J.G., (2022) La Rosa N., (2021.)) , is identified by a ratio in which the characteristic income from Room Division management is placed at the numerator. This value is generally defined. Gross Operating Profit Room Division GOPRD. The denominator of the ROIRD index, on the other hand, indicates the total capital invested in the characteristic management of the Room Division.

The ROIRD indicates the typical overall profitability achieved or intended to be achieved within the Room Division. There is no need to emphasise how this indicator represents an essential ratio for a Room Division Revenue Manager. In synthetic terms, it highlights the overall yield of the sector that this professional figure personally manages. Indirectly, it highlights the degree of customer satisfaction since the higher the ROIRD, the higher the revenue from room sales and, consequently, it can be assumed, the higher the customer satisfaction (Xiang, Z, Schwartz, Z, Gerdes, JH. (2015), Xiang, Z, Schwartz, Z, Gerdes, JH. (2015))

ROIRD %

RETURN ON INVESTMENT ROOM DIVISION (excluding common fixed costs of hotel)

ROIRD = Gross Operating Profit Room Division / Room Division assets.

To calculate the index correctly, please note how:

- 1) Gross operating profit Room Division represents the difference between all revenues of Room Division and all costs, variable and special fixed, of Room Division.
- 2) Total operating assets of the Room Division represent the total assets associated with the operation of the Room Division. All assets connected to Room Division must be included in this figure, such as the building share allocated to Room Division, furnishings, furniture, and receivables from Room Division customers. On the other hand, it should not include non-typical investments (e.g. securities and shares), financial receivables, tax receivables and non-typical by definition (e.g. receivables for the sale of obsolete furnishings), the share of buildings intended for uses other than those connected with the sale of rooms (e.g. the share of buildings designed for restaurants, the percentage of buildings designed for spas or other services included in the minor

operating division). Generally, the reception area is included in the capital invested in the Room Division because this hotel section is used, for the most part, by users of the room sales service.

As is well known by those who perform accounting data analysis, the characteristic profitability (Subramayam K.R., Wild J.J, (2008)) of the Room Division depends on two factors:

- 1) on how Room Division costs and revenues are managed
- 2) on how the capital invested in the Room Division is exploited in terms of obtaining turnover.

Point No. 1 represents the income aspect of the Room Division's characteristic profitability, while point No. 2 identifies the capital aspect of this profitability. For each of the two points, two ratios have been determined that highlight the two elements of ROIRD:

- 1) return on sale Room Division (ROSRD)
- 2) turnover Room Division assets (TOARD)

It should note that the product of the two ratios, which will be explained in the following pages, is the ROIRD index.

The two ratios mentioned above are analyzed on the following pages.

C) Profitability of Room Division sales in terms of GOPRD: ROSRD

The Return on sale Room Division (ROSRD) represents a fundamental indicator of the activity carried out by the Room Division Revenue Manager.

This indicator is calculated by contrasting the Gross Operating Profit Room Division with the total revenues of the Room Division.

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|---|
| <p>ROSRD %</p> <p>ROSRD= Gross Operating Profit Room Division / total revenue Room Division</p> |
|---|

This indicator shows how much the Room Division makes, in percentage terms, in terms of the Room Division's characteristic operating income (gross operating profit Room Division). There is no need to expand on this to understand how this profitability represents a fundamental objective to be achieved by any Room Division Revenue Manager. For this reason, this ratio is counted among the most critical objective indicators in the management activities of any Room Division Revenue Manager.

D) Turn over Room Division asstes Room Division (TOARD)

This indicator (TOARD) is determined by comparing the total revenues of the Room Division department with the assets invested in that department, which, as already noted, consists of the total assets connected to the management of the Room Division. All assets related to the Room Division must be included in this figure, such as the building share allocated to the Room Division, furnishings, furniture, and receivables from Room Division customers. On the other hand, it should not include non-typical investments (e.g. securities and shares), financial receivables, tax receivables and non-typical by definition (e.g. receivables for the sale of obsolete furnishings), the share of buildings intended for uses other than those connected with the sale of rooms (e.g. the percentage of buildings designed for restaurants, the rate of buildings intended for spas or other services included in the minor operating division). Generally, the reception area is included in the investment capital of the Room Division because this hotel section is used, for the most part, by users of the room sale service

| |
|---|
| <p>TOARD</p> <p>TOARD= total revenue Room Division / Room Division assets</p> |
|---|

F) GOPRVPAR (Gross Operating Profit Room Division per available room)

This index shows the ability of the Room Division revenue manager to maximise the characteristic profitability per available room. It is calculated by contrasting the Gross Operating Profit Room Division with the number of available rooms. Also, it would be appropriate for this ratio to split the year into meaningful periods and determine the indicator for each period. Only this way can comparisons between planned data and actual values be meaningful. Suppose the accommodation facility calculates this ratio only once a year. In that

case, the information will necessarily, be less significant and less relevant as it will indicate an average annual value of little significance.

GOPRVPAR (Gross Operating Profit Room Division per available room)

GOPRVPAR = Gross Operating Profit Room Division/ available room

3) Financial indicators for Room Division Revenue Manager

A) Cash flow Production of Room Division

Financial ratios generally have the characteristic of considering the entire enterprise as a single entity. For this reason, the main financial ratios do not divide the company into departments but consider the company as a single business entity. The various ratios, such as Quick ratio, current ratio, debt ratio, etc., are characterized by the fact that they do not divide the company into departments. They are characterized by the fact that all the values considered do not relate to particular business sectors but the entire enterprise (Narayanaswamy R., (2022)).

However, as far as the Room Division Revenue Manager is concerned, it is possible to identify a financial indicator that exclusively involves the Department assigned to him. This indicator is derived from the consideration of the ability of the Division managed by the Room Division review manager to produce cash flow, i.e. a cash flow from the revenues and costs characteristic of the Room Division itself.

The financial indicator involved in calculating and interpreting cash flow can be expressed in terms of absolute value or cash flow as a percentage of the Room Division Department's total revenues. Regardless of how one wishes to indicate it, this indicator requires the determination of the cash flow attributable to the Room Division.

This is not the right place to delve into all the problems connected with calculating cash flow. In synthetic terms, we would like to recall how this dynamic financial value derives from the sum of all the incoming and outgoing flows connected to the revenues and costs characteristic of the Department analyzed. Since our attention is focused on the Room Division Department, to calculate the cash flow produced by that Department, it is necessary to list all the revenues and characteristic costs connected to that Division and adjust these values by the amounts that did not produce incoming or outgoing flows.

Thus, the difference between the initial and final values of advances from customers must be added to or subtracted from the revenues, depending on the item's performance, and all credit write-offs implemented in the period under consideration must be considered removed. Concerning the costs associated with Room Division, to transform the costs into cash outflows, the costs will have to be modified with the changes in the balance sheet items that implicitly influenced the financial requirements associated with the cost under consideration. For example, the difference in payables to employees and the change in payments on account attributed to them will have to be removed at the cost of wages. The cost of amenities, the change in payables to suppliers of these goods, the difference in payments attributed to these persons, and so on will have to be subtracted or added. In other words, the cost of the profit loss is transformed into a dynamic financial flow of money by starting from the cost and modifying this value with the amounts that can withdraw from the balance sheet to show how the flow is different from the static figure of the cost of the profit loss. The sum of the inflows and outflows associated with the Room Division determines the cash flow of this Department. Never before has the financial aspect assumed such enormous importance in business management as it has in this historical era. For this reason, it appears desirable to attribute to the Room Division Revenue Manager also objectives of a financial nature, such as, for example, the attainment of a determined cash flow expressed in terms of absolute value or percentage value concerning the total revenue produced by his Department.

CASH FLOW ROOM DIVISION

Room Division revenues +/- Δ , advances from customers, write-off of receivables considered uncollectable (Room Division costs +/- Δ suppliers, advances to suppliers, payables or receivables related to Room Division costs) (costs without monetary impact such as depreciation, severance pay, provisions, etc., are not considered in this context).

CASH FLOW ROOM DIVISION EXPRESSED IN TERMS OF ABSOLUTE VALUE

CASH FLOW CAN BE EXPRESSED AS A PERCENTAGE OF THE ROOM DIVISION'S TOTAL REVENUES. THIS VALUE REPRESENTS ANOTHER INDICATOR THAT CAN BE CONSIDERED IN THE CONTEXT OF THE ROOM DIVISION REVENUE MANAGER'S MANAGEMENT ACTION

4) General operating performance ratios for Room Division Revenue Manager

The Room Division Revenue Manager, as part of his management action, must also set himself global objectives in terms of overall performance (.Vinod, B, Narayan, CP, Ratliff, RM (2009), Mauri A., (2012), Queenan, C. C.; Ferguson, M.; Stratman, J. K. (2011).) In addition to the income and financial indicators illustrated above, other general performance indicators can be identified that do not concern, purely, the income or financial situation of the Department but seek to identify the operational performance of the entire Room Division.

The Principle Performance Indicators (Becerra, M, Santaló, J, Silva, R (2013)) identify the Revenue Manager's ability to create wealth through the analysis of operational factors that, viewed from revenue or financial perspective, have a direct impact on the Department's situation and, consequently, on the overall condition of the accommodation facility.

The general performance indicator principles for the Room Division Revenue Manager are as follows:

Occupancy rate.

This indicator measures the ability to achieve high levels of room occupancy. The indicator is calculated as follows

occupancy= occupied rooms/available rooms.

Since, in accommodation establishments, room occupancy also depends on the periods considered (the occupancy of the Christmas holidays can be very different from that of any week in November), it is appropriate to determine this ratio by considering the values concerning the period analyzed.

This means dividing the year into sub-periods to make comparisons between valid and meaningful planned and actual indicators.

Considering the whole year, the occupancy rate will only provide an average value of medium significance.

Occupancy rate (OR)

Occupancy rate = occupied rooms /available rooms

Average Daily Rate

This ratio shows the average daily rate applied by the accommodation facility. Again, it is appropriate to determine this value by reference period since, often, prices vary depending on the season, the week of the month, the presence of events, particular holidays (Christmas, Easter, etc.) and the day of the week.

The ratio is determined by contrasting the total revenue from room sales with the total rooms occupied.

Average Daily Rate (ADR)

Average Daily Rate = total revenues room division / occupied rooms

Revenue per available room

Another very useful indicator for evaluating the performance of the Room Division Revenue Manager is the REVPAR or Revenue per available room. The index, in synthetic terms, is determined by contrasting the total room revenue with the number of available rooms.

Revenue per available room (REVPAR)

Revenue per available room = total revenues rooms division/ available rooms

It should be noted that REVPAR is the product between OR and ADR.

REVPAR= OR • ADR

The decomposition between the two indices illustrated above provides analytical information on the two issues analysed by the two indicators. In contrast, the synthetic REVPAR index offers general information concerning the ability to sell available rooms at a specific price.

Repurchase rate

To conclude the illustration of the operational ratios proper to the Room Division Revenue Manager, one can mention the repurchase rate, which indicates the percentage of customers who repurchase a particular service within a specific time frame (Kozielski, R. (2017)). This indicator is calculated by contrasting the number of people who repurchase the service within a particular period with the number of total purchasers of that service over the period in question. For the index to have a high informative significance, it is necessary to calculate this ratio differentially per service (each particular service must have its ratio) and for significant periods. Again, an annual average value is insignificant.

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|--|
| <p>Repurchase rate</p> <p>Repurchase rate = Number of persons repurchasing the service in a given time period/ Number of total purchasers in the given time period %</p> |
|--|

In addition to the internal performance indicators of the department Room Division, mention must also be made of the market performance ratios, indicators that each Revenue Manager must determine and interpret to understand the situation of the department he manages together with other managers.

Among these indicators, which we could define as 'market', are:

Market penetration index

MPI or market penetration index. This ratio shows the market penetration capacity (d Pan, CM (2007))el Room Division of the analysed accommodation. The MPI is calculated by contrasting the occupancy rate with the occupancy of the competitive sector.

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| <p>MPI market penetration index</p> <p>MPI market penetration index = occupancy rate / occupancy competitive sector</p> |
|--|

Fair market share

To complete the MPI, the revenue manager should determine the following indicators that provide the actual and potential capacity to cover a given part of the target sector.

| |
|--|
| <p>FMS Fair market share</p> <p>FMS Fair market share = camere disponibili in hotel /camere disponibili nel competitive sector</p> |
|--|

Actual market share

| |
|---|
| <p>AMS Actual market share</p> <p>AMS Actual market share = camere occupate in hotel / camere occupate nel competitive sector</p> |
|---|

It should note that the MPI derive from the contrast between AMS and FMS and is, of course, a percentage

$$MPI = \frac{AMS}{FMS} \times 100\%$$

All these market indicators must refer to the same management conditions. They must, therefore, relate to the same days of the week and the same period of the year; otherwise, comparisons are not meaningful and may, on the contrary, provide misleading values that are difficult to interpret.

Conclusions

To conclude the analysis of ratios that can be used to evaluate the performance of a Room Division Revenue Manager, it can be underlined how it is highly incorrect to consider, in this type of in-depth analysis, only the so-called operational performance ratios. The income and financial aspects of the Room Division Revenue Manager's activity represent two essential elements to understanding how this manager's activity impacts the overall situation of the hotel. Generally, however, it can see that the only indicators used are those defined as operational performance. At the same time, the income and financial elements connected to the

Revenue Manager's activity are entirely forgotten. Instead, it is essential to investigate these elements as well because it is only by understanding the income and financial impact of the Room Division Revenue Manager's activity that one can manage the technical tools that allow one to understand the complex global business situation and intervene to improve what can be managed more effectively and efficiently. This is why the income and financial indicators created in this article precisely to investigate the activity of the Room Division Revenue Manager are essential for the evaluation of his action and his management capacity. Without the aid of these indicators, no analysis of the activity performed by this manager can be said to be complete and truly useful in understanding the overall situation of the hotel. To conclude, one cannot fail to point out how the determination and interpretation of intermediate aggregates can be elements in which errors and misunderstandings are often identified. It is for this reason that in the article, attention was also paid to the calculation of Room Division and individual product (room) performance, which, very often, are subject to logical errors and misinterpretations of the data identified. Highlighting the informative capacity of the Net Unit Product Yield (N.U.P.Y.) and the unit and first-tier contribution margin prevents, on the one hand, erroneous calculations and, on the other hand, the use of aggregates in a totally erroneous manner, e.g. by using the Net Unit Product Yield (N.U.P.Y.) to make sales decisions. The analysis made in the previous pages of the problems posed by the calculation of product (room) and sector (Room Division) revenue yields, and the observations made on the use of such data are extremely relevant in order to avoid errors both in calculation and in the use of the ratios and aggregates determined in order to evaluate the activity performed by the Room Division Revenue Manager.

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