Capacity Management Issues in the Hotel Industry of Cape Coast Metropolis

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Abstract
Hotels relatively have a fixed capacity as the number of rooms cannot be changed according to demand. This makes the ability to balance demand from customers and the capability of a hotel's service system to satisfy demand a major concern for managers in Ghana's hospitality industry. However, capacity management is a key consideration, since occupancy is one of the two main performance indicators of successful hotel operations. This study explored capacity management concerns of hotels in the Cape Coast Metropolis. Data were gathered by questionnaires and all the hotels in the Cape Coast Metropolis, the leading tourist destination, were interviewed. The collected data were coded and analysed electronically, using SPSS. The study examined the nature of demand for hotel accommodation in Cape Coast Metropolis. Again, the strategies that hotels in Cape Coast Metropolitan area use to manage capacity were noted. Furthermore, the study assessed the benefit that hotels in Cape Coast Metropolitan Area get from capacity management. Finally, the techniques used in dealing with challenges of capacity management were identified. Based on these findings some recommendations were outlined.

Keywords: Capacity Management; Demand fluctuation; Occupancy patterns; Strategies.

1. Introduction
The increasing competition in the hotel market is a great challenge for hotel managers. Hoteliers are forced to respond, because simply selling landscape, nature or comfortable hotel beds is no longer sufficient. Hotels thus need to adopt appropriate strategies in order to succeed. This involves ensuring the survival and prosperity of a firm by implementing what will fulfill stakeholder expectations in the future (Grant, 2005).

Environments that are characterized by these changes require more flexible, dynamic or emergent approaches to strategy formulation (Christensen, 1997). Research has shown that firms that engage in planning and have appropriately designed and applied measures tend to have higher performance than those that do not (Gunder, 2003). However, achieving competitive advantage and increased market share in a competitive environment is complex. This is because businesses would need to operate with distinguished principles and characteristics in order to continually adapt to change.

Several strategies are used by hoteliers to ensure the survival and growth of their hotels through profitability in this competitive era. One of such strategies is capacity management (CM). Capacity management is the ability to balance demand from customers and the ability of the service delivery system to satisfy that demand (Armistead & Clark, 1994). Defining capacity in a service organization causes some difficulties, since most research has been focused on the manufacturing sector. The instantaneity of the service product and its characteristics of intangibility, perishability, simultaneous production and consumer participation make the balancing of supply and demand very important, particularly in capacity constrained industries like the hotel business (Kotler, Maken & Bowen, 2010; Jones & Merricks, 1994).

Tourism currently plays a relatively moderate but growing role in the Ghanaian economy. The general upward trend in tourism which is currently the fourth largest source of foreign exchange earnings affects all its facets. Receipts from tourism increased from $118.0 million (1.8% of GDP) in 1991 to $1,875.6 million (6.7% of GDP) in 2010 (GTB, 2010). International tourist arrivals have increased from 172,000 in 1991 to 931,224 in 2010. Bank of Ghana (2007) reported that tourism related jobs had more than doubled in less than ten years, through the provision of employment in both direct and indirect ways to over 200,000 Ghanaians.

Another important aspect of tourism statistics relates to the distribution of expenditure by tourists among the various segments of the industry. Expenditure on accommodation ranked first in tourists’ expenses. This followed by the catering (food & beverages) and entertainment & recreation and the other expenditures respectively between 1991 and 2010 (GTB, 2010).

A closer look at the statistics reveals that, the accommodation category has remained the topmost recipient of tourists' expenditures (receiving an average of about 31.3% of the total expenditures) since Ghana made tourism a priority sector in 1993 (Akyeampong, 2009). Therefore, though it is undisputable that the tourism industry is the fastest growing sector of the Ghanaian economy, it is the hotel industry in particular that is the main drive of the sector (GLSS 5, 2008; BoG, 2007; Baah-Boateng, 2004).
The hotel industry has been able to sustain supply steadily at an annual average growth rate of 7.7% since 1998 in the areas of number of hotels, rooms and beds to date, with the exception of the year 2006 when the industry registered a sharp decline in all the variables (GTB, 2010). As posited by the law of supply and demand, prices fall when supply exceeds demand. This increase in hotel supply over demand has thus resulted in keen competition, a fall in the annual average tourist expenditure on hotel accommodation and a corresponding decrease in the occupancy rates of hotels.

Sustained competitive advantage is an outcome of well understood company strategy by all employees, specified customer expectation and consistent products offering expected customer values to generate satisfaction. Capacity management uses strategies that, when implemented, lead to sustained competitive advantage to maximise profit by offering quality and innovative products at appropriate prices, according to customer expectations.

2. Capacity Management

As research into services management has evolved, several writers have addressed the capacity management problems in service industries and, to a lesser extent, the hospitality industry (Williams, O'Neill & Ali-Knight, 1999). Sasser (1976), Lovelock (1988), Armistead and Clark (1992), Armistead and Clark (1994) and Showalter and White (1991) have all discussed the demand-capacity problem in service industries in general, while Sill (1991) and Brotherton and Coyle (1990) have specifically focused on the hospitality industry.

The success of a hotel operation is closely linked to its use of room capacity and the prices charged per room. The key factor here is perishability, thus, if a hotel room is not sold for a night, revenue is immediately lost and cannot be recouped. Capacity management therefore involves certain trade-offs between the objectives of profit maximisation and operational cost efficiency. Matching the ability of the operation to provide the services to the expected volume of business (i.e. achieving full occupancy levels) must take into account all the costs of providing service and where possible, match these costs with the volume of business, i.e. maintain consistent room rates, (Jones & Merricks, 1994).

Hotels are generally said to have relatively fixed capacity as the number of rooms cannot be changed according to demand. The two variables that managers have recognized in order to manage capacity are average room rate and occupancy rate or the price – occupancy mix (Vallen & Vallen, 2009; Lockwood & Jones, 1990). Further, as a result of fixed capacity and high marginal costs, hoteliers may determine the optimal guest mix by addressing the extent of demand from existing markets, the potential demand from additional segments and the compatibility of hotel resources with market demand (Donaghy & McMahon-Beattie, 1995).

Additionally, capacity management in hotel operations could be explained as a difficult activity for managers because of the complex nature of the hotel product and the involvement of the customers in the process (Armistead & Clark, 1994). This restricts the options open for controlling the process and matching supply with demand. Hence, managers need to encourage the development of products and services to match customers’ needs more accurately or to focus operational and/or marketing activities on customers whose needs match the hotel’s resources (Vinod, 2004).

In order to utilize the fixed capacity of hotels fully, there is a need to find ways of controlling as well as stimulating demand (Choi & Mattila, 2003; Inkpen, 1998). According to Kotas (1986), almost all hotel operations have sales instability as a specific characteristic. However, managers can adjust such variables as average room rate and occupancy rate to compensate for fluctuations (Lockwood & Jones, 1990).

Fluctuations in the hotel business can be broken down into three groups: annual, weekly, and daily (Kotas, 1986). Annual fluctuations in the hotel business can be closely linked to seasonality, a problem regarded as typical of the hospitality industry. Weekly patterns, which is the fluctuation of business volume according to day of the week is more noticeable in hotels that cater to a clear market segment such as business and leisure. Business travellers will stay in hotels more during the week while leisure travellers may stay more on weekends and holidays. Daily patterns refer to differences between the levels of business depending on the hour of the day. Daily fluctuations possibly reflect that most people have a tendency to leave a hotel in the morning and come back at night.

Demand for hotel rooms, hence, fluctuates annually, weekly, and daily posing difficulties in predicting demand. Consequently, when dealing with the issue of fixed capacity, a balance between occupancy rate and average room rate must be achieved in order to achieve optimal revenue. The focus must not only be on high occupancy rates, attention must also be paid to the revenue that is generated. Selling too many rooms at a low rate may not be a good solution (Inkpen, 1998).

When managing service operations, the heart of the planning and control process is the interaction between capacity management, quality management and resource productivity or efficiency management (Armistead & Clark, 1994). With that, managers are confronted with contingencies in managing supply and demand. These barriers will in return affect the ability to maintain quality standards while at the same time achieving productivity targets. The issues are threefold:
1. The limited ability of the organization to alter capacity in terms of the extent of the change and the response time to make the change while at the same time having to deal with rapid fluctuations in demand.
2. The need to deliver consistent levels of customer service.
3. The varying degrees of uncertainty in demand.

According to Armistead and Clark (1994) there are four general strategies to manage these issues: altering capacity, holding inventory in anticipation of demand, requiring customers to wait for the service or influencing demand and holding it as an inventory. Hence, it is this element of service production that makes the matching of supply and demand very important, especially in hotels where the profitability of the operation is closely linked to the use of the current capacity and the prices charged.

A further strategy when striving to utilize capacity fully is to identify and characterise demand variables per sector over time in order to forecast demand (Donaghy, McMahon-Beattie, & McDowell, 1997). To do this efficiently, historical data should preferably cover at least two years in order to predict peaks and off-peaks in demand, and to determine demand sensitivity relative to microeconomic and external factors. No-show data is important in order to determine a sufficient overbooking policy (Donaghy et al., 1997). Ayia-Koi (2012) also identified some capacity management strategies including:

- ensuring that no room is out-of-order,
- reducing rate on hotel websites only during lean seasons,
- selling rooms to those with longer stay first,
- encouraging non-residential or day conferences during peak seasons,
- arranging with conference organizers to use low demand periods,
- closing of rooms for maintenance during lean seasons,
- keeping rooms in expectation of demand,
- selling rooms to double occupants first,
- influencing demand by maintaining rates or discounting.

Griffin (1995) listed accuracy of historical information among several factors that are essential to capacity management. Indeed, historical information and its proper analysis is a key reference point for future decisions and the more fragmented the data becomes the more useful is the information. Donaghy et al. (1995) suggested that historical data must be properly analyzed in order to predict any possible fluctuations in demand and fully utilize hotel capacity and forecast future demand.

3. Statement of the problem

The hotel industry is suffering a room capacity crisis. The economic downturn has depleted tourism demand significantly from its key markets and due to the development of several large new hotels; there is a potential oversupply problem, at least in the short-term. It has thus been predicted that the demand-supply imbalance in the hotel industry will lower occupancies, lower room rates and lower yields in the near future, (Pattern 1998; Pownall, 1996). In periods of low demand and strong competitive pressures, hotel managers are faced with the constant challenge of balancing customer demand against available room capacity to cover the relatively high fixed costs in hotel properties, at the same time as achieving operational efficiency. Hotels are characterized by high fixed costs, with no scope for product inventory and, as a result, experience problems with capacity (Donaghy, McMahon & McDowell, 1995). A critical element for the success of any hotel manager is thus to make the most efficient use of the operation's capacity to satisfy the needs of owners without disrupting product and customer service quality. By using various means to establish capacity, managers are more easily able to control their work and ensure utilization of facilities, thus ensuring both resource productivity and customer satisfaction (Harris, 1989).

Unlike their counterparts in manufacturing firms, the hotel industry cannot rely on inventories of finished products to act as a buffer between a tightly constrained level of supply and a widely fluctuating level of demand (Lovelock, 1988). Indeed future success will, in large measure, continue to be a function of management's ability to use available productive capacity as efficiently and effectively as possible. The productivity goal is to smooth the peaks and valleys of demand to avoid both excess demand and excess capacity which represents unproductive use of resources (Lovelock & Young 1979).

The study examined the nature of demand for hotel accommodation in Cape Coast Metropolis. Again, the strategies that hotels in Cape Coast Metropolitan area use to manage capacity were noted. Furthermore, the study assessed the benefit that hotels in Cape Coast Metropolitan Area get from capacity management. Finally, the techniques used in dealing with challenges of capacity management were identified. Based on these findings some recommendations were outlined.

This study will help hoteliers in the Cape Coast Metropolis know the nature and pattern demand as well as the best strategies, techniques and procedures used to manage demand. This will also help students in the
hospitality industry identify some best practices for managing hotel capacity. It will also help customers to know how to take advantage of low demand period to get special packages.

4. Methodology
Cape Coast was chosen because of the tremendous growth of the hotel industry in the metropolis (GTA, 2012). Though the smallest metropolis in the country, with an area size of 122 square kilometers it is the capital of the central region and the top tourist destination in Ghana. The metropolis has a lot to offer tourists ranging from lovely tourist attractions, hotels to hassle free transportation to neighboring towns. It has the highest receipt of both domestic and international tourist’s arrivals in the country.

The study used a descriptive design and the 44 hotels properly registered the GTA (2013) in the Cape Coast Metropolis was surveyed, but questionnaires were retrieved from only 37 out of the 44 hotels. The questionnaires used had both open and close-ended questions, with questions on demand fluctuation patterns, occupancy rate, as well as CM strategies, benefits, and challenges.

5. Results and Discussion
Table 1 represents the attributes of the respondents. From table 1, it is revealed that majority (55%) of the respondents were males, with females in the minority (45%), though the difference is not that much significant. Most (59%) of the respondents were operative staff, though reasonable proportion (41%) was made up of managers. Almost (83%) all of the respondents were youth between the ages of 20-29 had tertiary (58%) or second cycle (35%) education.

### Table 1. Demographic Information of Respondents (in %)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Position</th>
<th>Age</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Manager</td>
<td>41</td>
<td>20-29</td>
</tr>
<tr>
<td>Female</td>
<td>Supervisor</td>
<td>0</td>
<td>30-39</td>
</tr>
<tr>
<td></td>
<td>Operative Staff</td>
<td>59</td>
<td>40+</td>
</tr>
</tbody>
</table>

Source: fieldwork, 2014

Nature of Demand in the Metropolis

Figure 1. Occupancy Rate

From figure 1, it was clear that majority (79%) of the hotels in the metropolis have occupancy rates between 50% and 60%. This is followed by (14%) hotels with occupancy rates below 50%, whiles those with occupancy rates between 70% and 80% having the least (7%). Cape Coast have 535 rooms and 730 beds (GTA, 2012). If about 80% of the hotels get occupancy rates between 50% and 60%, then it means that on the average 214 to 268 rooms and for that matter 292 to 365 rooms respectively go waste daily. This is an indication of excess supply over demand. There are three possible reasons for this (Jangels & Coltman, 2004). One is that the supply of rooms is greater than the demand; another is that the existing demand in the metropolis is not compatible the existing supply and thus cannot be served with; and the third is that the supply is compatible but inferior in quality to the needs of the demand or market. Therefore, it is important that hoteliers in the metropolis analyze the hotel market situation to identify what exactly is responsible for the excess supply over demand.
Figure 2. Nature of fluctuations in demand (n=37)

Source: fieldwork, 2014

Figure 2 show the pattern of hotel demand fluctuation in Cape Coast. Kotas’ (1986) patterns of hotel demand fluctuation was adapted and used to enquire about the existing demand patterns of hotels in the metropolis. Most (41%) of the respondents chose the daily pattern, followed by (35%) weekly, then (21%) monthly, with annually having the least (3%). This means that the hotels handle more business during certain hours of the day than others. Unquestionably, guests usually check-in during certain hours of the day justifying why the situation is so.

The high (35%) proportion of respondents who opted for the weekly pattern also imply that, that proportion of hotels handle either business or leisure guest only. Kotas (1986) argued that it is when a hotel cater to a clear market segment that such a pattern emerge since business guests usually stay in hotels during the week while leisure guests stay more on weekends and holidays.

The small (3%) fraction representing annual fluctuation in the hotel of the metropolis indicates that seasonality is not a major problem in the area since Kotas (1986) links the annual pattern to seasonality.

It is impressive to learn that a significant (21%) number of respondents identify a monthly pattern in their demand. The monthly fluctuation was added to the options on the grounds that salary earners have a higher purchasing power on the hinge of the months when they have received their salaries and so may patronize hotels more around such times. This also points out that these hotels have salaried workers as a significant segment of their market.

Figure 3. High/Low Demand Days (n=37)

Source: fieldwork, 2014

Figure 3 shows high and low hotel accommodation demand days of the metropolis. Monday (76%) and Tuesday (73%) surfaced as the low demand days, whereas Friday (92%) and Saturday (84%) were the main high demand days. This statistics confirm two things that have emerged earlier on in figure 2. The first is Kotas (1986) argument that when a hotel cater to a clear market segment that the weekly pattern emerge because business guests usually stay in hotels during week days while leisure guests stay on weekends and holidays. The second is that salaried workers form a significant segment of the hotel industry in the metropolis’ market and will
mostly go there on weekends and holidays. Again, Cape Coast unlike Accra is not a business tourist destination (Akyeampong, 2007), explaining why the week days (especially Mondays to Wednesdays) are low demand days.

Figure 4 shows high and low demand months in Cape Coast. January (94%), February (97%), March (90%), May (93%), June (75%) and July (89%) were the low demand months. The hotels get low demand in January, February and March because of the excessive spending that characterize the Christmas festivities and the payment of fees that follow right afterwards. That of May, June and July is as a result of the heavy rains that are observed in these months which discourage travelling.

Figure 4. High/Low Demand Months (n=37)

Source: fieldwork, 2014

April (92%), August (100%), September (97%), and December (71%) were the high demand months. April’s high demand may be as a result of the Easter holidays; August and September also have high demand because of the Fetu Festival and the summer holidays; whiles the Christmas holidays explain the high demand in December. Other major events such as graduation ceremonies in the tertiary institutions and the speech and prize giving days of the secondary school also explain the high demand in the metropolis at particular times in the year.

Benefits of Capacity Management

Figure 5. Benefits of Capacity Management (n=37)

Source: fieldwork, 2014

Figure 5 indicates the benefits that compel respondents to practice capacity management. Most (59%) of the respondent had increased occupancy as their reason for managing their capacity; followed by (37%) those who apply capacity management to increase their average room rate, with those who apply capacity management in their operations for other reasons having the least (4%) proportion. So whiles some hotels in the metropolis prefer to build occupancy percentage using low room rates to attract business, others prefer to set a target
average room rate and are willing to sacrifice occupancy to achieve it in confirmation of what Kasavana and Brooks (2009) suggest.

Kasavana and Brooks (2009) indicate that hoteliers who apply capacity management with the intention of increasing occupancy may fail to account for the revenue lost because of lower room rates and may not take into account the cost per occupied room, thus reducing overall profitability. If increased occupancy does not rise above the losses resulting from the reduced room rate and stabilize cost per occupied room, profitability may go down. On the other hand, they add that those who apply it to increase room rate may lose some revenue because rooms that might have been sold at lower rates will remain unsold.

### Capacity Management Strategies

#### Table 2. High Demand Period Capacity Management Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>High Demand Period [in %]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensuring that no room is out-of-order</td>
<td>11</td>
</tr>
<tr>
<td>Selling rooms to longer staying guests first</td>
<td>16</td>
</tr>
<tr>
<td>Encouraging non-residential conferences</td>
<td>3</td>
</tr>
<tr>
<td>Managing capacity with non-discounting</td>
<td>47</td>
</tr>
<tr>
<td>Using overflow facilities to receive larger groups</td>
<td>4</td>
</tr>
<tr>
<td>Discouraging conference organizer to use this period</td>
<td>5</td>
</tr>
<tr>
<td>Selling rooms to large travel parties</td>
<td>14</td>
</tr>
</tbody>
</table>

**Source**: fieldwork, 2014

#### Table 3. Low Demand Period Capacity Management Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Low Demand Period [in %]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encouraging residential conferences</td>
<td>6</td>
</tr>
<tr>
<td>Reducing rates on hotel websites</td>
<td>12</td>
</tr>
<tr>
<td>Being used as overflow facilities by other hotels</td>
<td>9</td>
</tr>
<tr>
<td>Managing capacity with discounting</td>
<td>42</td>
</tr>
<tr>
<td>Encouraging conference organizer to use this period</td>
<td>6</td>
</tr>
<tr>
<td>Closing off rooms for major maintenance works</td>
<td>4</td>
</tr>
<tr>
<td>Increasing advertisements to boost sales</td>
<td>21</td>
</tr>
</tbody>
</table>

**Source**: fieldwork, 2014

Table 2 and 3 shows the various strategies the respondents use in managing capacity. Most (47%) of the respondents selected non-discounting as the main high demand strategy, followed by (16%) selling to long staying guest and then (14%) large travel parties. On the other hand, a good number (42%) of respondents opted for discounting as the main low demand CM strategy, followed by (21%) advertising and then (12%) online discounting.

Discounting is the main CM strategies both in the lean and peak seasons with guest party size, length of stay as the basis for discounting whiles advertising is the means of informing potential guest of the prevailing situation. Generally, yield is increased by raising room rate when occupancy is high refusing packages, requiring minimum length of stay, not discounting and discounting through promoting packages (Vallen & Vallen, 2009). Since yield is a product of room rate and occupancy equilibrium hotel managers ensure they obtain the same room revenue by increasing one factor when the other decreases as shown in figure 5. Hotels in the metropolis observe this yield management principle as a way of making sure that they meet the targeted room revenue, confirm Ayia-Koi’s (2012) earlier study on how hotel yield is managed.

Conference-related strategies (Low demand: encouraging residential conferences - 6%, encouraging conference organizer to use this period - 6%; High demand: encouraging non-residential conferences - 3%, discouraging conference organizer to use this period - 5%) are not common practice in the metropolis. This confirms the situation in figures 2, 3 and 4 that salaried workers is a significant segment of the market and that they usually come there on the hinge of the months and during the weekends and holidays. This also confirms Akyeampong's (1996; 2007) arguments.

### 6. Conclusions

In view of the findings of the study, it can be concluded that there is low demand level for commercial accommodation in Cape Coast Metropolis. Capacity management can serve as a good strategy to sell the over 40% excess supply of rooms over demand. Firstly, concerning the nature of demand in the metropolis it was realized that the destination cater to a clear market segment which is the leisure market, the reason why most rooms go waste during the week days, especially from Monday to Wednesday. The study on the grounds recommended that hoteliers should target the business market as well to reduce the differences in their monthly
occupancy rates and to minimize the over 214 rooms and for that matter about 300 beds of the metropolis’ less 800 beds that go waste every day, since Accra and Takoradi are at most 2 hours from Cape Coast. Secondly, hotels in the study prefer to build occupancy percentage using low room rates to attract guests, instead of targeting particular room rates and sacrificing occupancy to achieve. It is therefore recommended that they should guard against fails to account for the revenue lost because of lower room rates and not taking into account the cost per occupied room, so as to enhance overall profitability. This is because increased occupancy only makes business sense when it does not rise above the losses resulting from the reduced room rate. Finally, regarding capacity management strategies in use, it was found out that there is over reliance of hotels in the metropolis on discounting. It thus recommended that immediate efforts be made to look at the conferencing strategy organised by government of Ghana/UNDP/ILO, 2004. Accra, Ghana. Retrieved from www.rw.undp.org/.pdf on 21/11/2010.

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