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Justin M. Lancaster

University of Nevada, Las Vegas

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Lean and Six Sigma in Hospitality Organizations: Benefits, Challenges, and Implementation.

By

Justin M. Lancaster

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PART ONE

Introduction

The hospitality industry has perhaps been hit harder than any other industry in this current recession. People have less discretionary income and as a result are not traveling as often and spending as much when they do. Resort companies like MGM and Caesars Entertainment have accrued immense amounts of long-term debt over the past ten years to fuel the great expansion of resorts in markets like Las Vegas. According to MGM Resorts annual reports (2001,2011) long-term debt has doubled from approximately \$6 billion in 2001 to over \$12 billion in 2011 while revenues have only grown approximately 50% over the time period (p. 31). This perfect storm has created a great deal of uncertainty as to if these companies can continue to operate and stave off bankruptcy.

Hospitality firms big and small are looking at ways to keep costs low and to become more efficient just to stay afloat in this very challenging economy. Cutting costs in labor has been a popular topic in all industries during times of economic downturn. This is a particularly slippery slope in the hospitality industry where service may be compromised through cutting costs. Quality service is scrutinized by the customer in hospitality more than ever due to the fact that customers are fewer and are spending less.

In the third quarter of 2011, consumers continued to make less income, and in turn are spending less despite indications of an economic recovery (forbes.com, 2011). In areas of resort saturation like Las Vegas, the customer has so many options, they simply will not tolerate poor service like they may have in the past.

In spite of economic conditions, hospitality firms must be able to cut costs and still provide a quality product. A proven, effective way to do this in other industries has been to

adopt the principles of Lean and Six Sigma.

Lean and Six Sigma have created remarkable turnarounds in companies like General Electric and Lockheed Martin. Many companies that are doing well in this current economy like Amazon and Berkshire Hathaway consider themselves “Lean.” Despite this, hospitality firms that have embraced Lean and Six Sigma are few.

This paper will explore where Lean and Six Sigma have been successful in the hospitality industry. Hospitality giants like Starwood Hotels and Caesars Entertainment have implemented Lean and Six Sigma, but smaller firms could benefit from the programs as well. The roots of Lean and Six Sigma are in industries that are heavy on producing and manufacturing items. Due to the deep manufacturing roots, there are pre-conceived notions by some that Lean and Six Sigma cannot work in the service industries. The challenges and pitfalls of the implementation of Lean and Six Sigma in hospitality will be discussed.

The implementation of Lean and Six Sigma requires a systemic laid out plan that cannot be completed in a company board meeting in one day. This systemic plan of action is as crucial as the operating of the programs themselves. According to George (2003), failures occur most often in the execution of implementing of Lean and Six Sigma (p. 182). The components of successful implementation and the creating of a Lean/Six Sigma culture will be introduced and discussed in great detail.

Purpose

The purpose of this paper to provide a plan and framework to successfully implement Lean and Six Sigma into a hospitality organization.

Objective

An abundance of research exists on the successes of organizations that have implemented Lean and Six Sigma. The programs are quite prevalent in manufacturing, production, warehousing, and distribution. The paper seeks to explore the types of operations in hospitality that have used Lean and Six Sigma, and why adoption in other companies has not been prevalent.

Justification

The rough economic climate has forced hospitality firms to change their thinking on business strategy. In the Las Vegas market for example, the days where a new resort is built on the strip every year funded by long term debt seems to be a dead strategy. This is evidenced by a recent statement by Caesar Entertainment CEO Gary Loveman. According to Loveman, “If we are unable to meet our liquidity needs or pay our indebtedness when it is due, we may have to reduce or delay refurbishment and expansion projects, reduce expenses, sell assets or attempt to restructure our debt” (2011 Caesars Entertainment p. 8). Cutting costs is very much on the mind of leadership in large hospitality organizations.

At MGM Resorts, the issues are similar to that of Caesars. The existence of a large amount of long term debt, and shrinking revenues contribute to the problem here. According to MGM CEO Jim Murren “because of these economic conditions, we have increasingly focused on managing costs and continue to review all areas of operations for efficiencies” (2011 MGM Resorts p. 6).

Lean and Six Sigma has fueled the recovery of organizations in other industries and should be considered a option in hospitality. The programs have a proven track record of cutting costs and increasing operational efficiency. These are two items that are of great importance to the hospitality industry at this time.

Glossary

Six Sigma

A quality improvement program originating in the Motorola Corporation. Six Sigma's main philosophy is to limit defects in outputs by eliminating wasteful steps and the variation in an operation. The program seeks to achieve 3.4 defects per million opportunities, and relies greatly on the statistical analysis of processes (Fitzpatrick & Rogers, 2003).

Lean

A quality management program originating in the Toyota Corporation. Lean's main philosophy is to concentrate time and effort on identifying and refining steps in an operation that the customer deems valuable, and to eliminate wasteful or unnecessary steps in a process (Lee, Olson, Lee, Hwang, & Shin 2007). The program relies heavily on the observation of processes by management, as well as the importance of clean and efficient work spaces.

Part Two

Literature Review

Introduction

The need for the hospitality industry to streamline operations without compromising the quality of service is a pressing issue. The literature review outlines the key tools of Lean and Six Sigma, their use in hospitality, and why it hasn't caught on as quickly in hospitality as it has in other industries.

Six Sigma defined

Six Sigma's primary goal is to satisfy the customer and create customer loyalty to a product or organization. This is a simple enough concept. One that any organization seeks whether they subscribe to Six Sigma or not. Six Sigma differs in that it relies heavily on the statistical analysis of processes and utilizes that analysis to eliminate defects or inefficiencies in an operation (Fitzpatrick & Rogers, 2003).

The Six Sigma cause in an organization is lead by trained and certified personnel that are well versed in the utilization of the tools and methods. As in karate, the expertise and authority of Six Sigma trained personnel is signified by the belt system (Fitzpatrick & Rogers, 2003). The Six Sigma master black belt is the highest level of certification (George, 2003). In order for one to become a black belt, one must obtain education and pass an examination demonstrating the mastery of the principles and methodology. In addition, the black belt candidate must have lead two major continuous improvement projects. Some of the qualifying projects include any business process redesign or manufacturing reduction time.

Although Six Sigma requires an infrastructure of trained and certified leaders, employees of all levels of the organization are important to the process (Kivela & Kagi, 2008). All employees have equal input and participation in the process.

The road map at which Six Sigma identifies problems and inefficiencies and solves them is the DMAIC. The acronym stands for Define, Measure, Analyze, Implement, and Control. The DMAIC tool seeks to “decrease variation in the process by identifying and improving specific areas” (Kumar, Phillips, & Rupp, 2009, p. 178). The DMAIC is executed by all members of the organization in teams. As a result of this, Six Sigma is an endeavor that everyone in an organization must embrace, be trained on, and be involved with (George, 2003).

Lean Defined

The philosophy of Lean is similar to Six Sigma in that it seeks to eliminate waste. However it relies heavily on identifying what is valuable to the customer (Hodge, Goforth, Joines, & Thoney, 2011). Lean differs in that it does not require the infrastructure of trained people and leaders to implement (George, 2003). The Lean way to determine value is whether or not customers will pay for that step in the process (Irani, 2011). For example, a clean hotel room is something that a customer may hold valuable. Along the process of cleaning and preparing a hotel room, steps occur that the customer may not perceive as valuable. It is the goal of lean to eliminate the steps that the customer is not willing to pay for, and at the same time can be eliminated from the process without affecting the end product or service.

Lean accomplishes this by determining if steps in a process are value add, non-value add, or customer value-add. The value-add and customer value add are steps that cannot be eliminated from a process. Costs savings in Lean are realized by eliminating the non-value add steps. A preferred tool of identifying the non-value add steps is by way of the value stream map

(George, 2003). Value stream maps are a visual lay out of a process step by step. They are usually done in a group setting with those familiar with the process analyzed. Once wasteful non-value added steps are identified and eliminated, the organization is more apt to concentrate on delivering a more customer value added product (Ocak, 2011).

Another key principle of Lean is an organized workspace. Reducing the clutter, unnecessary items in a workplace, and maintaining a clean workspace has many benefits. Some of these benefits include giving the area a more professional look, making the operational environment easier to navigate, and enabling relief workers to take over for others in an efficient fashion (George, 2003). The Lean tool of the 5s accomplishes this. The 5s' stand for Sort, Straighten, Shine, Standardize, and Sustain. In the sort phase, the workspace is organized by taking out items that are not used. An example of this may be the housekeeping supply closet at a hotel where broken brooms and mops are present, and discarded. In the Straighten phase, items are arranged in an area in a manner where they are easily accessible. In the housekeeping supply closet example, cleaning supplies that are pulled from stock most often are staged in an area where they are quickly accessible.

The shine phase refers to the cleaning of the area, and creating an environment where it will be easy to keep it clean. The standardize phase is ensuring that the work done in the previous three stages is maintained. Finally, the sustain phase is to make sure all employees are utilizing the workspace are adhering to the procedures that the 5s created.

Hospitality Successes in Lean and Six Sigma

With the understanding of the Lean and Six Sigma and the key principles that guide the programs explained, we seek find them in action in hospitality. "Six Sigma DMAIC methodology implementations, specifically, in the hotel industry are non-existent" (Kumar,

Phillips, & Rupp, 2009 p.173). At least one organization in the hotel industry, Starwood Hotels implemented Six Sigma in 2001 (Starwood turns to Six, 2004). As a result of the implementation, that included launching 3500 Six Sigma projects at Starwood hotels worldwide, the company realized some quick financial wins. Incremental revenue increased 19% and overall spending by customers while staying at the properties increased by nearly 12% in the few months after implementation. By centralizing the spa reservations group by utilizing tools of Six Sigma, Starwood claimed a revenue increase from 91 to 141 million pounds (Starwood turns to Six, 2004).

Food production, due to its similarities to the manufacturing industry has had success on case by case basis in using Lean and Six Sigma principles. A large scale food production at the Glostrup Hospital in Denmark utilized 5s and value stream mapping to eliminate wasted meals from 10% to 5% (Engelund et al. 2009). The 5s process at Glostrup arranged the ingredients storage area in a fashion where the most used ingredients were most accessible.

Value stream mapping highlighted a problem area where meals were cooked, stored, and reheated days later when they were served. The system, when first implemented at the hospital, appeared to be successful as it lowered the demand for employees in the kitchen. Upon analysis of this process using Six Sigma, a large amount of waste or uneaten meals were identified.

Value stream mapping, and Kaizen events can analyze processes of any type, and are not exclusive to manufacturing or producing items. A hotel airport shuttle service was analyzed using Lean and Six Sigma tools resulting in shorter wait times and less customer complaints (March & Fugazi 2002). The 323 room franchise hotel offered a shuttle service to and from the hotel and airport. Upon requests by customers, the shuttle would provide transportation to other places in the vicinity like shopping centers and businesses.

The analysis found inadequate staffing, and pitfalls in communication by dispatch and transportation staff and drivers. The redesign included prioritizing of runs, (airport runs more important than runs to a shopping center) and to streamline the request process (Creating a centralized area where transportation requests were called in). This business redesign represents the prioritizing of customer's request (identifying of customer value add) and streamlining operations (centralized request center).

Although there is not research or case studies to support it, Lean and Six Sigma can be effective in a housekeeping operation in a hotel. Lean 5s, and the kaizen process can benefit the housekeeping industry to eliminate waste and increase efficiency (Beiser, 2010). Housekeeping seems to be an ideal candidate for 5s due to the need to manage a stock of cleaning supplies. The process of cleaning a hotel room is one that could be easily analyzed by way of value stream mapping.

Reasons of reluctance towards Lean and Six Sigma in Hospitality

The literature suggests that Lean and Six Sigma can be successful amongst many departments within a hotel. Despite evidence of success, Starwood Hotels is the only hospitality organization to fully implement Lean and Six Sigma into all aspects of the operation. This calls to question why Lean and Six Sigma are not more prevalent in hospitality. The importance of setting up an infrastructure of trained leaders in Six Sigma may be a point of reluctance (McCrossan, 2008). Often times, the strongest people in an organization are tasked to lead the Six Sigma cause. The extensive training and additional responsibilities that these employees are imposed with may compromise the ability to do their original jobs.

Another possible reason for reluctance is that managers in the hospitality industry are not necessarily adept or see the need to analyze statistics and root causes to problems (McCrossan,

2008). To these managers, the way they have managed operations for years and have served customers in ways they have found most preferable. Lean and Six Sigma may pose a threat to their way of doing things and represent a fad that may only be around for a little while.

Another possible reason for the reluctance to use Six Sigma and Lean in hospitality is the requirement of a commitment and buy in at all levels of the organization. Participation at all levels is important. In many cases, process redesigns and kaizens can streamline a process where less manpower is needed which may result in layoffs. This can make employees reluctant to participate (McCrossan, 2008).

While hospitality firms see the benefits of quality management programs like Lean and Six Sigma, they might be turned off due to the lengthy amount of time to implement fully (Sila & Ebrahimpour, 2003). It may take numerous years to fully Lean and Six Sigma company-wide. The commitment to time, capital, and other resources without an immediate return on investment may not seem like a prudent business decision.

The high turnover rate of employees in the hospitality organization could also be considered a pitfall to successful implementation. Hotels, especially smaller seasonal lodges are constantly combating the problem of retaining quality employees (Kumar, Phillips, & Rupp 2009). The extra cost to train new employees on Lean and Six Sigma principles may be a burden leadership may not want to take on.

Another resistance to Lean and Six Sigma from the hospitality industry is the stigma that these programs are only applicable in production and manufacturing environments (Engelund et al 2009). Lean and Six Sigma are well known for the organizations they originated in, which are manufacturing centric. The measurement tools used in the programs may not be perceived as useful in the service industry.

Keys to Successful Implementation of Lean and Six Sigma

Despite Lean and Six Sigma being well recognized for their successes in driving efficiency, standard framework to implement the programs does not exist (Moosa & Sajid, 2010). . The literature on Lean and Six Sigma instead points to critical areas that can be utilized in implementation.

A key component to implementation is setting up an infrastructure of trained personnel that are committed to the tools and philosophies of the programs (George, 2003). In order for Lean and Six Sigma to be successful, it must not be a standalone project in an organization but one that is complimentary and works in unison with the employee's everyday responsibilities. In order to accomplish this, employees at all levels are trained on the principles, tools, and their roles.

Hiring Six Sigma black belts or trained personnel in Six Sigma from outside the organization will not necessarily guarantee successful implementation (Moosa & Sajid, 2010). A certain amount of failures along the way should be expected. During the early stages of implementation, failures of initial projects can be as many as 30-60 % and should not be a great cause for concern (Moosa & Sajid, 2010).

Despite lack of standard framework for implementation, an organization must have a laid out plan prior to launching the program. There are seven phases to consider when implementing Six Sigma in an organization (Moosa & Sajid, 2010). These are envisioning, strategizing, developing, implementing, improving, sustaining, and abandoning.

The envisioning phase is where management or leadership initially becomes interested in Six Sigma. They analyze the tools, and how they can be utilized within their organization. Strategizing is the phase where management decides to implement and identifies the tools

necessary to implement and the players who will implement and run the program. This will be the most important part of the process (Moosa & Sajid, 2010).

The developing phase focuses on the roles of the major players or employees that will run the program. Training of the leadership within the organization occurs during this stage. In the implementing phase, the actual execution of continuous improvement events takes place. It is at this time that the organization determines if training was sufficient, if the greater employee base is embracing Six Sigma, and then recommendations are made for improvement.

In the improvement phase, the recommendations made in the implementing phase are taken on and put into action. Furthermore, management will seek to strategize to increase Six Sigma in the organization. A strong attention to if the program is causing improvements is analyzed in the improvement phase.

In the sustaining phase, management and leaders must maintain what has been implemented. The Sustaining phase is hopefully where the culture change of the organization occurs as a result of the wins that have occurred from the Six Sigma projects. In the abandoning stage, which can occur at any point during this process, the program is ditched. This can occur for a number of reasons, and means the end for the program entirely.

The amount of Six Sigma black belts, trained sponsor project managers or green belts, and budget are critical factors to the speed and breadth of implementation (Hu, Wang, Fetch, & Bidanda 2008). Taking on too many projects at the beginning may result in failing to implement Lean and Six Sigma, and eventually abandonment of the program.

Creating a culture of collaboration and involvement is key to successful implementation, and can be hindered by more controlling styles of management by leadership (Kivela & Kagi 2008). In some organizations, managers are not accustomed to seeking feedback and asking for

input from subordinates. Lean and Six Sigma thrive on obtaining feedback and advice from line employee upward. This culture altering is sometimes a difficult undertaking, and perhaps another reason the programs have not been more prevalent in hospitality.

Conclusion

Uses of Lean and Six Sigma have been limited in hospitality despite the documented success of Starwood Hotels implementing it company-wide in 2001. The successes in hospitality have occurred in one department projects that were usually aimed at solving one problem. Research suggests that Lean and Six Sigma processes can be beneficial in improving many departments within a hotel to include house-keeping, food production, and transportation. Value stream mapping can be used to analyze almost any process within an organization and promotes various stake holders to come together and solve problems.

The lack of implementation and reluctance towards Lean and Six Sigma is due to the daunting task of changing the culture of the organization and the resource costs associated with training and setting up infrastructure. As a result, Lean and Six Sigma implementation may be more effective at a smaller organization, consisting of fewer properties. Larger organizations could implement in phases where a couple of properties or a geographic region launches Lean and Six Sigma. This would enable the organization to continuously improve the process of implementation along the way. This would reduce the chance of abandoning the programs altogether as a result of early project failure.

Part Three

Introduction

Lean and Six Sigma have been successful in Hospitality as the literature has suggested in smaller departmental doses. While little research suggests that it can be successful implementing it fully across an entire organization in hospitality, an implementation approach that rolls out the principles in certain departments, or at smaller properties would be most appropriate. In this section, a guide for implementation of Lean and Six Sigma will be introduced that could be carried out at a small hotel property, or on a departmental level within a large resort property like those found on the Las Vegas strip.

Results

Lean and Six Sigma is a viable option to enhancing operational efficiency in hospitality organizations. Although many of Lean's principles are unique to a manufacturing industry, we find that they can apply to certain departments within hospitality. Those departments that manage any supply can benefit from the Lean 5s. Hotels manage a tremendous amount of stock ranging from housekeeping supplies, gaming tables, slot machines, and food and beverage. Lean 5s assists in space optimization which is of great importance in managing a hotel property.

The hospitality industry is a dynamic one in which a given property may have several departments that provide and manage different amenities. The tendency seems to be that these departments often operate as many different silos or little businesses. For example, the marketing department may launch a new campaign that the gaming department may not be privy to. The convention sales department may roll out a new all inclusive meeting package that the hotel reservations department is unaware of. If anything, Lean and Six Sigma principles foster open communication and collaboration amongst all departments. An example of this is value

stream mapping or kaizen events which require the input, participation, and physical attendance of members from all departments within an organization. Communication between departments could never be perceived as a negative thing. Lean and Six Sigma tools can assist an organization in becoming more of a seamless company in which all the parts are moving in the same direction.

The largest obstacle to Lean and Six Sigma not becoming more prevalent in hospitality is that it requires a culture change, and demands a new way of thinking. The literature points to the negative stigma that Lean and Six Sigma often portray to those who are not familiar with it. To some, Lean and Six Sigma are tools to eliminate jobs, and a creation of an environment of tireless analysis of operations that fails to celebrate success and harps on what was done wrong. Older management and industry veterans in hospitality will want to stick to what they have found successful in the past, and are not as apt to change their old school ways.

Another important obstacle is the commitment and investment needed to implement Lean and Six Sigma. The opportunity costs of time and money to implement are difficult for some management to overcome. Implementation, even in a small property or organization can take a year or longer. With training budgets and other capital expenditures shrinking due to the uncertain economy, investors and stakeholders want return on investment quicker.

Luckily, these obstacles can be overcome. There is enough literature to support that Lean and Six Sigma have transformed struggling companies into thriving ones. It is the responsibility of the Lean Six Sigma infrastructure in an organization to effectively communicate this to all employees. To the hard liners who want the status quo, it is important to point to the failures of the hospitality industry as a whole in the past years. The old way of doing things is not applicable to the current state of the industry. Lean and Six Sigma successes in other industries

need to be communicated as well as the notion that the organizations that do not adapt and seek to continuously improve will get left behind.

The stigma of old school management will still be hard to overcome in spite of evidence that Lean and Six Sigma are effective. Many will fail to buy in, and participate. The way to overcome this is to create an infrastructure of fresh thinkers that have displayed the ability within the organization to adapt well to changes, and that have subscribed to a philosophy of continuous improvement. This may be the younger pool of employees within an organization that have not developed a status quo mentality. Furthermore, it will require that the organization recruit employees who possess these abilities to fill future positions. A culture change is a large undertaking, but will be less painstaking to seek those within the organization that will embrace Lean and Six Sigma to lead it.

In terms of investment, and immediate return, the organization can overcome this by employing a Six Sigma Black Belt to lead the implementation and continuous improvement endeavors. The Six Sigma Black Belt certification process requires that the candidate has successfully lead and implemented a number of continuous improvement programs that had positive financial results. It will be likely that the black belt will have a good degree of the understanding of the principles, and will have had hands on experiences with the implementation and every day operations of a Lean Six Sigma company.

Furthermore, employing a black belt in and of itself may be enough to justify the investment of implementing Lean and Six Sigma in a small property of organization. A Six Sigma black belt can provide an organization with cost savings of \$450,000 annually (Fitzpatrick & Rogers, 2003). It is unlikely that an organization would spend anywhere near this amount implementing Lean and Six Sigma. This could provide the justification for the implementation

time and the costs associated, which ultimately will provide the buy-in and support of senior level management for launch of the program.

Guide to Implementation

The following framework for implementing Lean and Six Sigma is appropriate for a department within a large hotel or resort, as well as a small to medium size hotel. In either case, the total amount of employees is approximately 100. In an operation of this size, implementation time is shorter, training of the whole staff is a less arduous process, and successes and failures of the program can be identified quicker.

Moosa and Sajid's seven phases of implementation is utilized to execute the principles of Lean and Six Sigma into the department or hotel. The seven phases provide a road map and process in which to implement the programs, as well as creating the culture change necessary for the program to be successful. This implementation guide and its initial usage in the department or hotel will serve as a pilot test that can be used to implement Lean and Six Sigma in other departments and hotels if successful.

Two hypothetical entities are used within the guide to provide an example of how implementation occurs. One of these entities is a housekeeping department within a large hotel or resort. The housekeeping department was chosen as it has similarities to a manufacturing or production operation in which Lean and Six Sigma is heavily rooted in. Furthermore, essential tasks of the housekeeping department like hotel room cleaning can be easily analyzed by value stream mapping, spaghetti diagramming, and DMAIC.

The small to medium sized hotel was chosen as the other entity because its employee count is one that would generate a faster implementation time than a larger hotel. Also, to

illustrate that Lean and Six Sigma can be beneficial and implemented into all departments of a hotel.

Phase 1 Envisioning

In the case of the small to medium sized hotel, or in the housekeeping department, the envisioning stage of implementation occurs at the corporate level. An officer or executive will either have an interest in Lean and Six Sigma, or middle management will be drumming up support for the programs from the corporate level. The goal in this stage is to obtain corporate support for Lean and Six Sigma implementation. The program cannot enter phase 2 unless corporate agrees to support the effort. There must be a commitment from corporate to fund training programs and any other expenses that may result in the implementation. Corporate must also commit to push the message and spearhead the culture change necessary. The officer or executive that will be the leader at the corporate level for the program will be the Lean/Six Sigma Champion (George, 2003).

It is likely that the intent to implement Lean and Six Sigma will come from the corporate level. This is especially so in the housekeeping department example, as it be unlikely that a department head could implement such a program without the directive or approval from the executive level.

In the case of the small to medium size hotel the envisioning stage may occur differently. If the hotel is not part of a large chain or franchise, and is a standalone hotel, the envisioning stage can involve hotel management. The goal is still the same in this scenario: There must be a commitment from management and/or hotel owner to provide financial support to the program, and to lead the charge in the culture change.

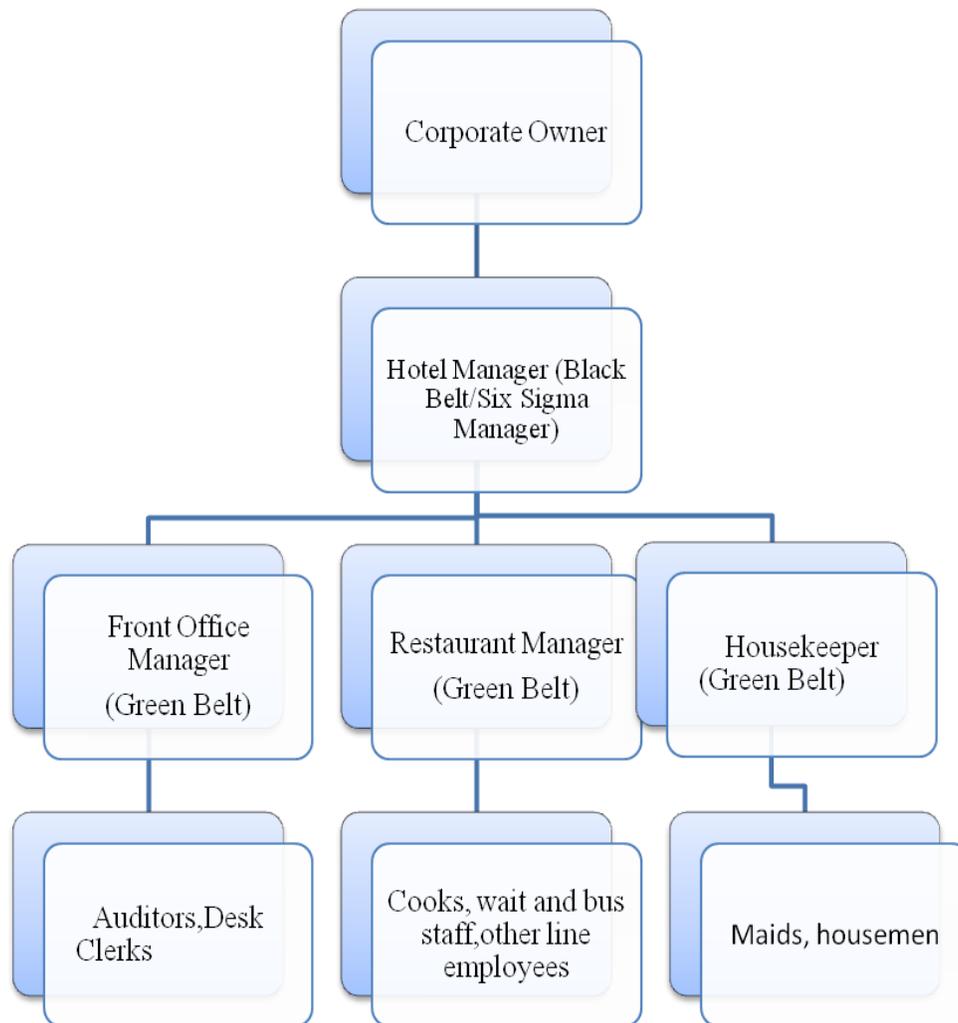
Phase 2 Strategizing

This stage requires the formation of the structure that will carry out the Lean and Six Sigma program. This will also involve the training of all employees on the principles of Lean and Six Sigma, and how they apply to their particular positions in the organization.

In this phase a Six Sigma Black Belt will be hired to be the leader of the program and implementation. The black belt will have experience in training an organization on the principles of Lean and Six Sigma. They will also have had hands on experience in all the steps that go into implementing, sustaining, and achieving successes in the program.

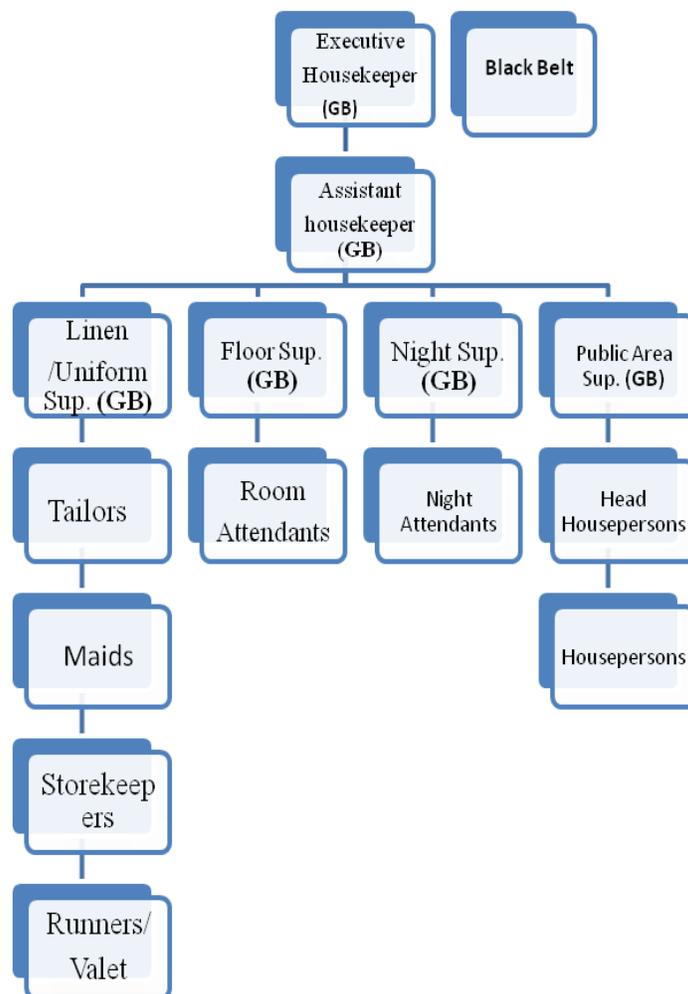
While it is highly recommended that an organization hire a full time black belt, this may not be a realistic cost that a small hotel can burden. In the case of a small to medium sized hotel, they may seek to hire a specialist that has had extensive experience in a Lean Six Sigma organization. A cheaper route would be to appoint a leader within the organization and obtain Lean Six Sigma training for the leader through the American Society for Quality. The ASQ provides education for black belt certification, and extensive education on Lean Six Sigma principles. While this route may be cheaper on the surface, implementation time will take longer as the leader will not have the experience or training to carry on the program right away.

Whether an organization can hire a black belt to lead the program, or will train someone from within, the key to phase 2 is to have the complete infrastructure Lean Six Sigma leaders in place to carry out the program. This layer of leaders are known as green belts, and will receive two weeks of training from the black belt (George, 2003). In the case of the housekeeping department or small to medium sized hotel example, the green belts will be the departmental managers or supervisors. The green belt training consists of utilizing DMAIC methodology, value stream mapping, Lean 5s, and other tools to analyze processes, eliminate waist, and increase efficiency.



Small to medium-sized organizational chart adapted from “medium size lodging property” by J. Bardi, 2011, *Hotel Front Office Management*, p. 47. Copyright 2011 by John Wiley & Sons, Inc.

The organizational chart is from a hypothetical medium sized hotel (Bardi, 2011). In this scenario, the hotel General Manager serves as the Lean Six Sigma Champion, and depending on budgetary constraints may serve as the black belt or Lean Six Sigma manager as well. The green belts would be the front office manager, restaurant manager, and housekeeper.



Housekeeping department organizational chart adapted from “Organizational chart of a housekeeping department in a large hotel,” by G. Raghubalan, and S. Raghubalan, 2009, *Hotel Housekeeping Operations and Management*, p. 22. Copyright, 2009 by Oxford University Press.

The organizational chart from a hypothetical housekeeping department within a large hotel contains more departments than the medium size hotel (Raghubalan & Raghubalan, 2009). In this case, it is assumed that the budget for the program is larger, and a black belt is hired to lead the program. The black belt can be called on to lead the seven phases of implementation in another department at a later time. As a result of the large operation more green belts are appointed. These include the linen/uniform supervisor, floor supervisor, night supervisor, public

area supervisor, as well as the executive and assistant housekeeper although they are higher on the organizational chart.

The late stages of this phase will involve the training of all staff on the principles of Lean and Six Sigma. Champions, black belts, and green belts will begin to identify projects to execute in the next stage

Phase 3 Developing

The phase works the same way in the housekeeping and small to medium hotel examples. The black belt or Six Sigma manager will work with the green belts to identify projects and processes to analyze. Some projects that may occur in the housekeeping department include the 5s process of housekeeping supply rooms, and value stream mapping events to identify wasteful or unnecessary steps in the hotel room cleaning process.

In the small to medium size hotel example, some projects could include value stream mapping of food production in the restaurant, guest check in at the front desk, and hotel room cleaning.

Phase 4 Implementing

The goal of this phase is to get some projects running, and to begin to create an environment in which the principles of Lean and Six Sigma are intertwined into the everyday operation. All levels of employees are involved in the execution of the projects, and everyone has equal input in providing feedback on how to improve processes. No more than 10 projects should be launched during this initial phase. Due to the size of the hypothetical operations, a more appropriate number of initial projects are 5-7.

Phase 5 Improving

In this stage, the success of the program is analyzed. Lean Six Sigma leadership will need to determine if the projects have been successful in making the operation more efficient and if a culture change is occurring. If the program has not been successful at this point, then it is most likely due to the pitfalls that can occur with implementing Lean and Six Sigma into a hospitality organization. Leadership must develop a plan to overcome management that has been reluctant to buy in to the program and perhaps appoint new employees in the infrastructure.

Based on whatever failures or successes have occurred, management will devise a plan to sustain the successes and to improve upon the failures. As the literature suggests, there may be a number of failures in the initial projects. A high failure rate will not necessarily mean that the program should be abandoned. Any improvement in performance of employees and the operation as a whole is progress.

Phase 6 Sustaining

This phase is the execution of maintaining the successes of the program, and to overcome the failures. The positives of the program should be celebrated and communicated to all levels of staff. The champion must continue to push the idea of a culture change and must point to the successes as proof that the program is working. Employees who have refused to have embraced the program will have to be addressed at this time. The level of commitment by Lean Six Sigma leadership must be stronger than ever in order to sustain the progress that has been made. Inaction during this phase can mean eventual abandonment of the program.

Phase 7 Abandonment

This phase can occur at any time of the process. It can happen for a number of reasons. One is the inability to create and maintain an infrastructure of strong committed leaders to carry out the program. This is truly the skeleton to the programs' body. If any leaders within the

infrastructure lack the commitment to stick to the program, or do not believe in its benefits, they will be reluctant to push the program.

Another reason for abandonment is due to too many perceived failures in the implementing stage. It should be expected that there will be many failures early on. The key is to identify if the program is realizing any degree of improvement of efficiency or cost savings, and to not jump ship too soon. Finally, another reason for abandonment may be the inability to overcome the perceptions that the old way of doing things is still best, and that Lean and Six Sigma cannot be successful in hospitality.

Conclusion

This guide can serve as a tool that enables hospitality organizations large and small to implement Lean and Six Sigma in a controlled way. The large organization will continually have the ability to tweak implementation after every implementation cycle. This would not be the case if the program was implemented on a larger scale. Also, the organization will have the ability to analyze the costs associated with implementation and make improvements on those.

The smaller hotel property, like the family owned seasonal lodge, can use this guide in order to implement Lean and Six Sigma on a limited budget. In cases where a black belt cannot be employed, the Lean Six Sigma trained General Manager can use the goals listed in each phase of the guide to successfully implement the program.

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