

Reduction of the Vacation Ownership Cancellations in a Hospitality Industry

*Michelle Núñez Núñez
Master of Engineering in Manufacturing Engineering
Carlos González, Ph..D.
Industrial Engineering Department
Polytechnic University of Puerto Rico*

Abstract — *Quality loyalty is what all enterprise aims to have with every customer. Hotel chains compete to have the best deals for less. In order to make things different from others, new implementations have revolutionized the simple definition of a hospitality industry. The Hotel, in which this report will be based, have implemented, several years ago, a point-based ownership program that have transformed worldwide old fashion hotel chains. This is a program that wants to give families the opportunity to travel the world with a package that is for the rest of their life, from generation to generation. To maintain a continuous service improvement they need to create a method to engage the customer and avoid cancellations, in a way that they receive more for less. Businesses can implement various methods to achieve goals. Recommendations are applied to help reduce cancellations and determine the right path for continuous quality improvements. Lean Six Sigma philosophies are applied to reach perfection through the service process in this hospitality industry.*

Key Terms — *Customers, DMAIC, Financial, Lean.*

INTRODUCTION

Customer satisfaction is involved in every enterprise no matter if it is a production or a service company. In a hotel enterprise a good service is the key to maintain the customer engaged to the hotel. Good customer services involve everything in the hotel: telecommunication, front desk service, room service, neatness, and many other things that are involved in the resort expertise.

The hotel industry is worldwide services network that are managed by different owners, locals or worldwide hotel chains. To maintain the customer it is important to achieve their

expectations to uphold their loyalty. The best management service is the key to most customers to feel the way they want to be treated in their vacation.

This worldwide hotel chain, it will be called The Hotel, is consider one of the word's largest developer and marketer of flexible, points based vacation ownerships products. The Hotel has acquired more than 185 vacation ownership resorts worldwide. This meaning that the hotel developed a technique that improve the old hotel traditional vibe and make it more family friendly selling vacation ownership packages based on the customer finance status.

Timeshares is a property with a particular form of ownership or use rights. These properties are typically resort units, in which multiple parties hold rights to use the property. Units may be on a partial ownership, lease, or "right to use" basis, in which the sharer holds no claim to ownership of the property.

The Hotel revolutionized the traditional timeshare model with the launch of point-based ownership allowing owners the flexibility to choose the timing, duration, location and accommodation options for their vacations, this is called the Vacation Ownership. This provides the opportunity to clients to have a long-term experience to enjoy with family and friends by having no limited time of power, in other words, a perpetuity contract.

The Vacation Ownership markets, sells and finances vacation ownership interest, provides property management services to property owners' associations and develops vacation ownership resorts. With more than 500,000 owner families around the world, The Hotel is a leader in providing world-class lifetime vacations.

Hospitality Description

Hotels are establishments that provide basic accommodations for lodging paid on a short-term basis. These facilities offer hospitality to travelers featured of the earliest civilizations from the mid 17th century. Hotel operations vary in size, function, and cost.

LITERATURE REVIEW

In every enterprise it is important to have an improvement methodology in control to achieve the elimination of defects in their production and processes. Defects are any component that does not fall within the customer's satisfaction limits; there is an opportunity in any step or activity in a company. To attain this cycle of improvement, companies use the Lean Six Sigma philosophy and methods.

Lean Six Sigma is a combination of both Lean (focused in removing waste) and Six Sigma (focused on reducing variability) quality approaches. The underlying tenet of the *Lean* approach is *efficiency*, whereas that of *Six Sigma* is *effectiveness*. These two combinations provide a balanced approach to quality [3]. (See Figure 1)

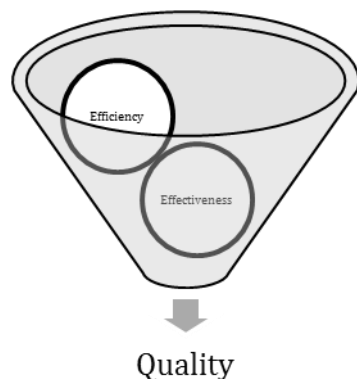


Figure 1
Quality Combination Balance

Efficiency describes the extent to which time, effort or cost is well used for the intended task or purpose. It is often used with the specific purpose of relating the capability of a specific application of effort to produce a specific outcome effectively with a minimum amount or quality of waste,

expenses, or unnecessary effort. Effectiveness is the capability of producing a desired result. These two terms can often be misused and confused. In general:

- Efficiency: measurable concept, quantitatively determined by the ratio of output to input.
- Effectiveness: a relatively vague, non-quantitative concept, mainly concerned with achieving objectives.

Lean Manufacturing

Lean is a quality approach that considers the expenditure of resources that do not create customer value. Lean involves a lot of quality tools such as [1]:

- Five S (5s)
- Value stream mapping
- Mistake proofing (Poka-Yoke)
- Production leveling
- Pull systems (Kanban)
- Loading balancing (Heijunka box)
- Queuing theory
- Motivation
- Measurements

Lean has received wide popularity in production and information manufacturing, as well as in service. In self-service Lean targets several types of waste:

- Duplication: customer reentering data and repeating operations.
- Delay: customers waiting for self-service delivery.
- Unnecessary movements: due to poor navigation and poor ergonomics of the self-service delivery.
- Complexity: complex self-service designs that is difficult for users to comprehend.
- Errors in the self-service transaction: nonconformance to customer specifications or expectations.

Lean provides a way to: specify value, line-up activities in the best sequence without interruptions

and efficiency; do more with less; create new work rather than eliminating it to increase efficiency [2].

Six Sigma

Six-Sigma seeks to improve the quality of process outputs by identifying and removing the cause of defects, errors, and minimizing variability in manufacturing and business processes [4]. It is the vital importance continuous effort to achieve stable and predictable process results to business success.

Manufacturing and business processes have characteristics that can be measured, analyzed, improved and controlled.

Six Sigma is compound by five steps that seek to reduce the variation in the processes that lead to any defect. A process or service that is in a Six Sigma control will produce no more than four defects out of every million units [4].

This methodology is a complex procedure to apply in a production process or service. This is not something that is implemented one time, this need to be a continuous improvement cycle to achieve the reduction in the variation process or service.

The five steps that are involved in the Six Sigma Methodologies are compound by many tools that help to achieve improvements [4] (See Figure 2).

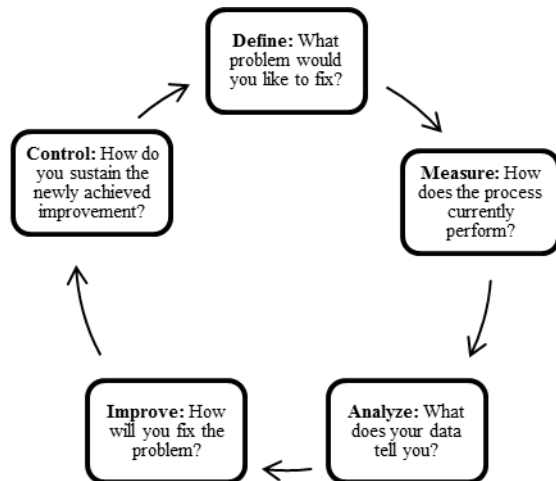


Figure 2
DMAIC Improvement Cycle

Selection Phase

To start a potential project, management needs to approve it. In this selection phase, potential projects are identified. The project problem and goal statements are prepared and include in a team charter, then the managers that approved the project confirm it. Managers select the right team to work in this project and assure that they are properly trained. The project process needs to be monitored to ensure success.

Define Phase

Define the problem is the first phase of the Lean Six Sigma improvement process. This phase of the project is where the process is evaluated and begin to use tools to help organized the process and the needs of the customers. This is a critical phase where teams define the outline of their efforts for themselves and the executives of the organization [6].

There are many tools you can implement to help understand the right path to start this process improvement. To implement the right tools there are some steps that can be follow [4]:

- Problem statement: it is important to determine there is a problem through the process that is affecting the improvement of the production process or service. There are many problems that need to be evaluated and improved but some have more priority than others, with this said, it is important to confirm that the problem is a high priority and will have a high impact.
- Goal statement: this is the consecutive step after determining the problem statement. Tools are implemented to measure the goal of the process success and determine the expected time that each phase should be considered successful. A project charter can be a tool to present these statements.
- Map the process: to develop a process map the classic tool to use is called SIPOC (suppliers, inputs, process, outputs and customers). This tool is used throughout the life of the project.

Also a flow chart can be implemented to represent the process.

- Who is the customer and what are their requirements: each project focus is the customer of the process. The customer is defined as the individuals or groups that receive the good or service of the process. These customers can be internal or external components of the organization. The customer is the priority and because of their needs, this improvement process is required. With this said, each team should contact customers to understand their requirements of the process or the voice of the customer (VOC). This information is evaluated to translate them into measurable requirements to give the team insight on how to solve the problem or make improvements. To represent what it is important to customers, Critical to Quality (CTQ) can help to decompose customer requirements into more easily quantified elements.

Measure Phase

The measure phase is where the current service process is mapped out. Throughout the life of the project the measurement is critical. The teams need to focus on collecting data determining the baseline of the service process and find clues to understand the root cause [5]. To incorporate the right tools [4]:

- Determine how the process performs: to start any investigation the first step is to determine the actual condition of the system before making any changes. This baseline becomes the standard against which any improvement is measure.
- Find what might be causing the problem: teams work to discover the reasons / “root cause” for defects as a result though the process. Tools like cause and effect diagram, and value stream mapping help to identify waste.
- Create a plan to collect data: team needs to determine how to collect data, how much and

who. This data needs to be accurate and reliable.

- Update the Project Charter: team will have more details after collecting data to identify potential causes and goals.

Analyze Phase

Analyze is the phase to identify the cause of the problem. In this phase the data is analyzed and interviewed with the measure phase. The teams review the data and determine if they need additional information [4]. This is a continuous procedure until the team analyzes both the data and the process to verify the root cause of waste and defects [5]. This phase include tools to determine the cause of the problem [1] [4]:

- Examine the process: the team needs to create, verify and examine the service process establish in the measure phase. Then the team can make value of each step by analyzing the process.
- Visually inspect the data: display the data collected using charts and graphs for visual indications for problems in the process. This visual presentation helps teams to communicate their findings to leaders and other process participants.
- Brainstorm potential causes of the problem: teams develop theories around possible causes of the problem. Using a Cause and Effect Diagram to structure their brainstorming ideas and help narrow down to the vital few causes of defects and waste.
- Verify the cause of the problem: before making any improvements, the team should make sure that the proposed root cause is creating the problem by verifying their data through process analysis, data analysis, process observation and comparative analysis.
- Update the Project Charter: after investigating the data it will be detailed process performance and potential for improvement. The Chart can be updated by more accurate reflections of the project status.

Improve Phase

The improvement phase implement and verify the solution. Selecting the right solution to solve the problem is the next step after making all analysis needed to understand the problem. To achieve the right improvements [4]:

- Brainstorm solutions: the designated team should generate their ideas of quality for the process.
- Select a practical solution: the team makes the right solutions for improvement.
- Map the process with the solutions: make process maps to help guide the team toward the new process and help trained employees for the new process.
- Implement the solution: to achieve a good improvement plan; logistic, training, documentation and communication plans should be considered.
- Measure improvement: the team needs to measure the improvement and assure a progress.

Control Phase

Control phase helps maintain the solution. After making improvements, managers document how they want the new service structure. Tools can be implemented [3]:

- Continuously improvements: teams implement new improvements tools to service process. Determine what makes value to customers, optimize the service process, ensure process respond to customers demand, and continue to pursue perfection.
- Assure process is managed and monitored properly using control plan.
- Expand improvements throughout organizations: update the documentation.
- Apply new knowledge in other process: apply gains to transfer improvements.

This is a continuous improvement cycle life for the production process or service.

METHODOLOGY

The Hotel provides tours to client to inform the different packages that they offer. It is important that employees give the client all the possible deals that they can invest and then decide the right deal for them based on their income and desires.

The management recollects data analysis every month for a period of one year. Every data collected is to evaluate the activity each month: seller ID, gross sales, gross volume, cancellation volume, net tours, net sales, net volume.

Last year, 2013, data was collected per month to evaluate the situation and determine how to optimize the cancellations percent of the Vacation Ownership of The Hotel. This project will provide recommendations to implement them in the future and develop a Lean Six Sigma philosophy continuous improvement.

Define the Problem

What problem would you like to fix? The Hotel is receiving complains and that drive up to cancellations that The Hotel wants to minimize. The enterprise has recently employed a person to analyze the situation and to determine the right path to implement improvements throughout the service process and optimized the current situation

The goal statement has not been specified, but Table 2 shows a Project Charter that needs to be filled with the measurable statements and time estimations for each phase [3]. This Chart needs to be updated though the project. The quality managers need to state a goal to determine the right methodology to implement improvements and reduce the cancellations percent.

The hotel has a service process that represents each step the employees need to follow to achieve a sell. The following flow chart (see Figure 3) represents the service process they want for the Vacation Ownership.

Table 2
Project Charter

| Reduction of the Vacation Ownership Cancellations | | | | |
|---|---|--------------------|----------------|-------|
| Project Leader | Michelle Nunez | Project Sponsor | Manager | |
| Start Date | March 10, 2014 | Target Date | May 8, 2014 | |
| Project Description | Improve the output quality reducing the Vacation Ownership cancellations using tools following the DMAIC methodology. | | | |
| Scope | Reduce the Vacation Ownership cancellation to a percent that is established by managers after making evaluations. | | | |
| Project Goal & Measure | <ul style="list-style-type: none"> Reduce cancellations by an establish percent. Reduce variation. | Project Y's | Baseline | Goals |
| | | Cancellations | | |
| | | Month Variation | | |
| | | Cost | | |
| Expected Business Results | <ul style="list-style-type: none"> Reduce cancellations percent. Reduce variation between months. Increase predictability in the service process. Increase revenues through reduction in cancellations. | | | |
| Team Members | <ul style="list-style-type: none"> Green Belt: Quality Engineer: Sellers: | | | |
| Support Required | <ul style="list-style-type: none"> Allow periodic discussion reunions. | | | |
| Expected Customer Benefits | <ul style="list-style-type: none"> Enjoy the point based worldwide vacation program. Understand all benefits included in each package. All family members enjoy the program for generations. | | | |
| Schedule | Milestone / Duration | Phase | Target Date | |
| | D- Define / 1 week | D - Completion | March 17, 2014 | |
| | M- Measure / 3 weeks | M - Completion | March 31, 2014 | |
| | A- Analyze / 2 weeks | A - Completion | April 14, 2014 | |
| | I- Improve / 2 weeks | I - Completion | April 28, 2014 | |
| | C- Control / 1 weeks | C - Completion | May 8, 2014 | |
| | | Project Completion | May 8, 2014 | |

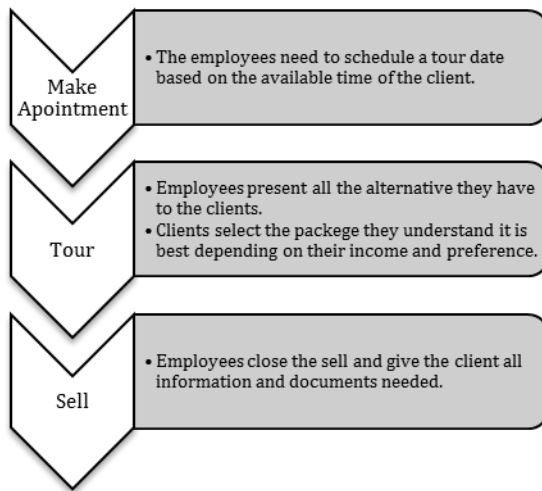


Figure 3
The Hotel Service Process

In every process it is important to determine who are the customers and what they want. The customers are those families that purchase the Vacation Ownership programs at The Hotel. The Voice of the Customer (VOC) tool help teams to take comments, determine the underlying issues represented by those comments and this information to develop measurable customer requirements [2]. After making phone calls surveys

they have conclude the main reasons of the cancellations are:

- Personal reasons: financial; dead of primary, secondary or both; inheritance rejection; divorces.
- Compliance: the seller explains something wrong; the seller does not explain something (example: taxes deductions).
- Misrepresentation: sold the program the wrong way and this lead to legal issues.
- Foreclosure: legal process, they stop paying and lose the program.
- Other reasons: this can lead to a deal with the client to avoid the whole payment depending of the reason.

All the highlighted customers issues needs to be evaluated and convert the comments into something concrete so that the team can focus preventing them and meet their requirements.

Measure Phase

How does the process currently perform? Through an investigation, managers map the current situation to determine the baseline of the project. Teams prepare a brainstorm diagram (Cause and Effect Diagram, Ishikawa Diagram), like shows Figure 4, to determine what might be causing the cancellations [2].

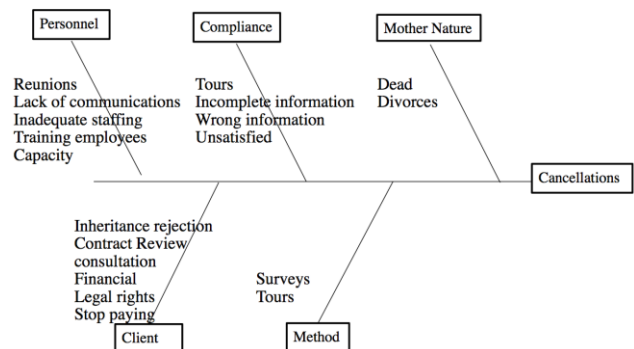


Figure 4
Cause and Effect Diagram (Fishbone Diagram)

The hotel had always make phone surveys to determine:

- After a period of purchase: how the program is functioning and if they will like to improve the point-based program.

- If they cancel: fill a questioner to determine why they cancel.

Based on statistics, The Hotel in the last year (from January 2013 to December 2013) had 571 gross sells and a 26% of cancellations, living a net sell of 422 Vacation Ownership (see Table 2).

Table 2
Yearly Sales Report 2013

| Gross Sales | Cancelled Sales | Net Sales | Percent of Cancellations |
|-------------|-----------------|-----------|--------------------------|
| 571 | 149 | 422 | 26% |

Based on an economic analysis, they lost an amount of money depending on the type of package that the clients purchased. Table 3 represents the total amount in 2013.

Table 3
Yearly Volume Report 2013

| Gross Volume | Cancelled Volume | Net Volume |
|--------------|------------------|-------------|
| \$12,068,576 | \$2,748,771 | \$9,319,805 |

Analyze Phase

What does your data tell you? The selected teams needs to analyze the situation and determine the right path to implement improvements through the service process and optimized the current situation [6], see Figure 5 for current percent of cancelations per month.

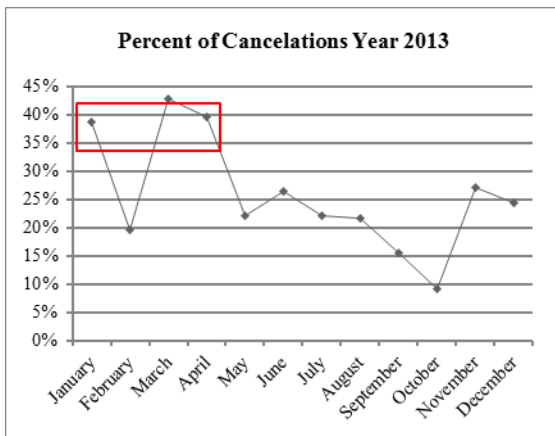


Figure 5
Percent of Cancellation 2013

Statistics shows that the month with more cancellations was March, presenting a 43% of cancellations. This followed by April with a 40% and January with 39% of cancellations. Teams need to evaluate this situation and determine the possible reasons that are causing almost 50% of cancellations. More research is made with the collected data to determine how to attack the problem and determine how the company is monetary affected.

When presenting the cancellations in money lost per month, the Figure 6 shows the different between the net volumes vs. cancelled volume.

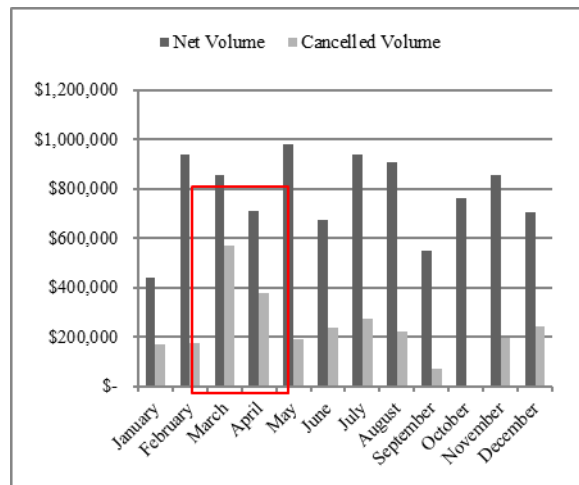


Figure 6
Volume Net Sells vs. Volume Cancelled Sells 2013

Visually the Chart shows that even thou the Vacation Ownerships packages are not the same in price, in March the cancellations affected economically the enterprise because they lost 40% of what they accomplish in volume sells in March, followed by April with a lost of 35%, see Table 4.

Table 4
Highest Volume Sells Lost Report

| Month | Net Volume | Cancelled Volume | Lost Percent |
|-------|------------|------------------|--------------|
| March | 854,195 | 569,615 | 40% |
| April | 708,750 | 378,910 | 35% |

The most important question about this data is: why are they cancelling the Vacation Ownership program? This is a perpetuity program and sellers

in time do not see a genuine sell because is not a real house that they can have on their own. In fact, is better than having just one house because depending in the program that the client take (a based-point program) they can visit and stay in any part of the world that is included in the program.

Every survey is recorded and archived in the computer to then monthly report the statistics. Based in the last year statistic the survey reported the most frequent complains about the program, and why they are cancelling (see Figure 7).

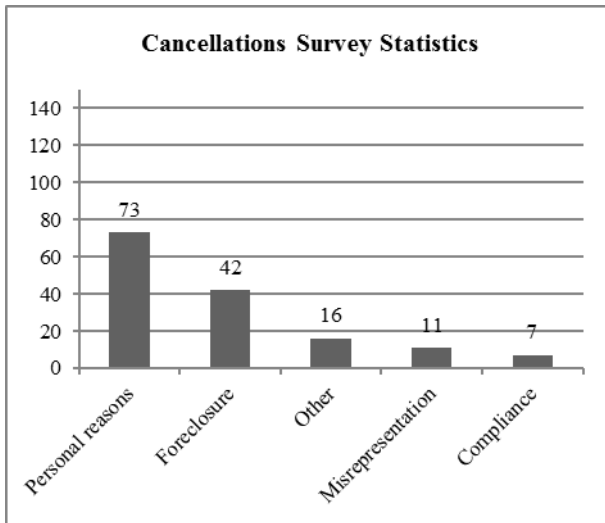


Figure 7
Cancellations Survey Statistics

“Personal reasons” present the frequent motive of cancellations, Figure 8 shows the statistics results taking in consideration the highly motive of cancellations.

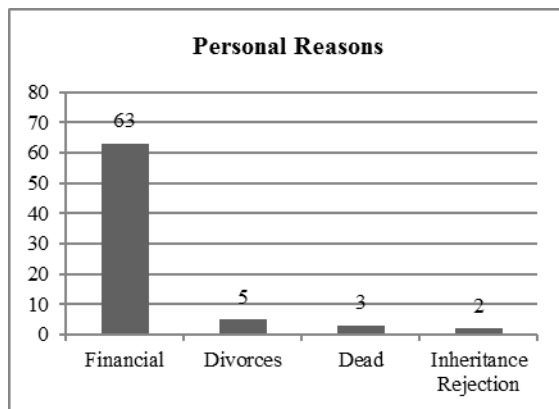


Figure 8
Personal Reasons Cancellation Survey Statistics

Financial concerns are the principal cancellations in the last year, showing a 42% of all cancellations (149 total cancellations) in 2013. Based on results, the focus should include the financial concerns of clients. They have talk trough surveys and ask for lower Vacation Club programs that can be in their expertise.

Improve Phase

How will you fix the problem? Rates should be evaluated and determine how to satisfy the client by giving them the right package deal paying less with more privileges.

Various Lean tools can be implemented to fix problems effectively. Kaizen (continuous improvement) is a Rapid Improvement Events (RIE) that is typically a one-week focused to quickly develop/implement solutions in a short time frame [2]; it can be carried bit by bit. These can be done in teams that carry out improvement in regular basis.

Implementing this continuous improvement The Hotel can see results rapidly and focus in maintaining improvements and link other issues that are causing cancellations. Following these steps (see Figure 9) will help improve the current situation [7] [8]:

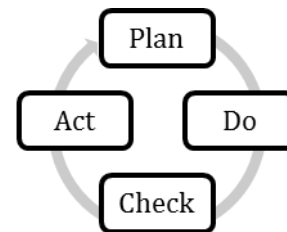


Figure 9
PDCA Cycle

- **Plan** (Objectives): Reduce cancellations percentage testing the possible effects. After surveys, financial represented the most causes of cancellations. The Hotel managers need to determine new rates that can be in a large range of client expectations.
- **Do** (Implement): Make trainings to implement new changes. Collect and measure new data (surveys) per month.

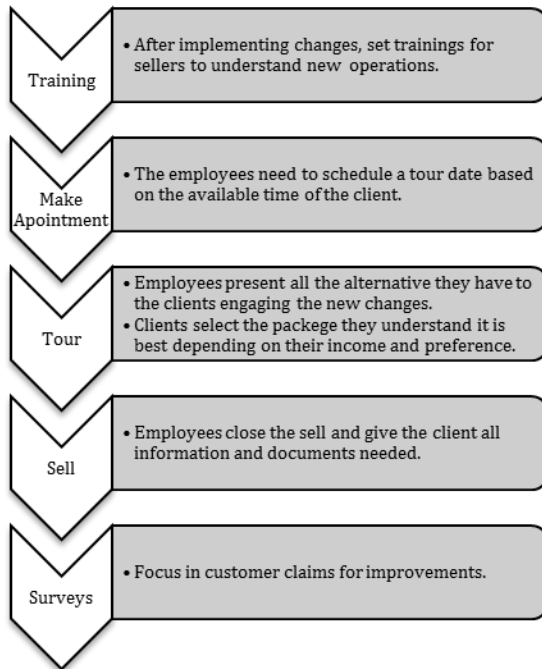


Figure 9
The Hotel Service Process (Proposed)

- **Check** (Study): compare surveys results with target. Determine the new cancellations percentage and determine if the implemented improvements reduced the cancellations, principal the financial complains. Charting implementations (“Do”) helps see trends over several PDCA cycles and convert collected data into information (“Act”).
- **Act** (Correctives actions): compare new results with objectives to analyze differences and determine their root causes. Teams need to determine where to apply improvements in service. Comparing surveys results will help reduction in cancellations and implement a continuous improvement to get closer to clients expectations.

Control Phase

How do you sustain the newly achieved improvement? After making improvements The Hotel needs to maintain control. Management needs to design and document the necessary control to ensure that the gained improvements can be sustained once the changes are implemented. To

complete control phase the following steps need to be completed:

- Develop a service process control plan.
- Maintain improvement gains thought cancellations.
- Design controls and document the improved service process.
- Share and implement improvements with sellers, trainings.

CONCLUSION AND RECOMMENDATIONS

Every business based company needs to establish a quality improvement program to maintain a continuous progress in behave clients’ loyalty. The Hotel is presenting loyalty problems because of the amount of cancellations. Research leads to determine the reasons because of what people are cancelling the program, so recommendations and improvements are implemented.

Financial problems are something that affects worldwide people. Because of this reason, hotels need to offer suitable programs of expenses in the customers range. The clients mayor cancellations complain were because of financial problems. Through 2013 some months were highlighted representing a sum of cancellations that were affecting financially the enterprise. A continuous improvement method will help the decrease complains and achieve more customer loyalty. Some recommendations were establish through the investigation:

- Start making improvements on what is their mayor concern, financial. Reducing packages and giving more to the customer will help more loyalty. Implementing a continuous improvement to maintain achievements.
- Implement continuous changes. Because this is an improvement cycle, every quality change needs to be implemented and notify every member of the team. All sellers need to take training to understand the new changes.
- Expand surveys. Establishing surveys not only to customers that cancel a program, all

customers should be contacted and determine how is functioning the program and if they are getting what they expected. To maintain loyalty every customer needs to feel part of a continuous quality improvement.

- Assure all sellers are capable. Not because sellers take training makes them capable of doing the job. Managers need to determine a way to analyze each seller and determine if they need other trainings.

REFERENCES

- [1] Juran, J. M., et al., "Lean Techniques", *Juran's Quality Handbook*, 6th Ed., 2010, pp. 327-354.
- [2] Gonzalez, C., "Lean Tools", *Lean Manufacturing*, 2013.
- [3] Morales, J. A., "Lean Techniques and DMAIC", *Lean Six Sigma*, 2013.
- [4] Torres, E., "DMAIC", *Six Sigma*, 2013.
- [5] Juran, J. M., et al., "DMAIC", *Juran's Quality Handbook*, 6th Ed., 2010, pp. 357-384.
- [6] Jacobs, F. R., et al., "DMAIC", *Operations and Supply Management*, 2nd Ed., 2010, pp. 142-167.
- [7] Jacobs, F. R., et al., "Kaizen", *Operations and Supply Management*, 2nd Ed., 2010, pp. 279-291.
- [8] Juran, J. M., et al., "Kaizen", *Juran's Quality Handbook*, 6th Ed., 2010, pp. 328-336.