Call Handle Time Project

Submitted to:

VS

Prepared by:

MD

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Executive Summary

Of the five contact centers currently in operation, the SM contact center has historically operated with the highest average call handle time (AHT) in the system. A number of factors believed to contribute to this situation have been identified, the most significant being the complex regulatory guidelines for the affiliate companies served by the center, differing from the other centers. Organizational experience has corroborated this belief, making it difficult to compare performance with other centers on this metric.

In 2001 contact center consolidations resulted in the SM contact center handling a significant portion of the CGO customer calls, which are also handled by the MCO contact center. However, differences in reporting systems, processes, experience levels and technology prevented objective comparisons at that time.

During, and following, the enterprise wide Operational Excellence (OE) initiative started in 2002, great progress has been made in establishing common metrics, reporting systems, technology and process at each of the Company X contact centers. Now that sufficient time has passed to allow for "learning curve issues" and with common technology, metrics, processes and reporting systems in place, it would be reasonable to expect AHT performance for the same call type to be equivalent at each center. However, a difference in AHT remains between the centers. Analysis shows that nearly half of the Customer Services Representatives (CSRs) handling CGO calls at SM are expected to have an AHT over the established target.

The project was limited to examining the AHT for the CGO customer calls at the SM contact center; finding root causes for the high AHT and identifying / implementing actions to improve performance. Review of AHT for other queues at SM, or other contact centers, were out of scope and will be handled in separate projects.

Weekly AHT data was collected for individual CSRs for the same 2-month period. The population was restricted to CSRs with over one year of experience, and only those with 100 or more calls for a given week. Data was collected from the current Performance Plus reporting system used to provide performance feedback to CSRs at all Company X contact centers. Interviews were held with contact center CSRs and management staff to identify potential drivers of increased AHT and potential areas of improvement. The interviews provided valuable insight in identifying potential sources of special cause variations.

Analysis of the data collected confirmed that there is a statistically significant difference in AHT between the MCO and SM contact centers. Stratification of the data revealed that the differences are in the work and hold time components of AHT. Internal analysis of the SM contact center revealed that two sources of special cause variations exist, training program methods and differences in target performance expectations. Also identified were differences in the variance of performance by team. Analysis was also conducted to

confirm that there is not a relationship between AHT and quality assurance measures. The AHT, for the data set, is not correlated to quality assurance results.

The recommendations to improve SM's current AHT performance for CGO calls, specifically work and hold time, and to reduce performance variation between teams are as follows:

1. Call Aid training for CSRs not initially trained with the Call Aid tool *(near completion)*
2. Revision and / or elimination of the 150% of target guideline *(initial reduction to 125% of target)*
3. Continued review of CSRs identified as performance outliers *(team leader focus on ACD / CC Pulse intra day activities)*
4. Increased analysis support from Performance Management team

Through these actions we are moving to meet the objectives of improving SM's AHT to match or improve on the MCO contact center performance. The project is expected to reduce AHT by a minimum of 12 seconds on a forecasted 940,000 customer contacts, which will provide a cost saving estimated to be $112,800. An alternative to capturing the entire savings is to use the majority of the increased call handling capacity to improve CSR availability to the customer, a key driver of customer satisfaction. Key output indicators impacted are cost-per-call, average speed of answer, and customer satisfaction.

Initial indications are that the project is impacting AHT at the center level and that the actions are improving performance on other call types in addition to the CGO customer calls. Should these preliminary results hold, benefits will be more than double those originally targeted.

Introduction

This report presents a detailed explanation of the steps followed, using the Six Sigma problem solving methodology, to examine the SM AHT of CGO customer calls. The purpose of the report is to present the findings the team made using the DMAIC process steps of define, measure, analyze, improve and control.

Following the Six Sigma process the team identified:

- SM center having a higher AHT for the same call type when compared to the MCO center.
- Internal special cause variations related to training program methods and differences in target performance expectations.
- Performance variances between teams.
- Recommended actions to improve performance.
- Expected benefits.
- Methods of controlling performance.

Define Phase

Of the five Company X contact centers currently in operation, the SM contact center has historically operated with the highest average call handle time (AHT) in the system. A number of factors believed to contribute to this situation have been identified, the most significant being the complex regulatory guidelines for the affiliate companies served by the center, differing from the other centers. Organizational experience corroborated this belief, making it difficult to compare performance between centers on this metric.

In 2001 contact center consolidations resulted in the SM contact center handling a significant portion of the CGO customer calls, which are also handled by the MCO contact center. However, differences in reporting systems, processes, experience levels and technology prevented objective comparisons at that time.

During, and following, the enterprise wide Operational Excellence (OE) initiative started in 2002, great progress has been made in establishing common metrics, reporting systems, technology and process at each contact center. During the initial implementation phase of the OE initiative AHT targets were set for each queue at each center. However during this phase common technologies and process were not yet established, therefore individual targets were set specific for each contact center based on historical performance. This resulted in different targets for the CGO calls at the SM and MCO contact centers.

Now that sufficient time has passed to allow for "learning curve issues" and with common technology, metrics, processes and reporting systems in place, it would be reasonable to expect AHT performance for the same call type to be equivalent at each center. However, a difference in AHT remains between the centers.

Contact Center	N	Mean
MCO	345	299.6
SM	112	312.3

Table 1. Mean of Two-Month Sample

The project is limited to examining the AHT for CGO customer calls at the SM contact center. Review of AHT for other queues at SM or other contact centers will be handled in separate projects.

The project is expected to reduce AHT on a forecasted 940,000 customer contacts, which will provide a cost saving estimated to be $112,800[1]. An alternative to capturing the entire savings is to use the majority of the increased call handling capacity to improve CSR availability to the customer, a key driver of customer satisfaction. Key output indicators impacted are cost-per-call, average speed of answer, and customer satisfaction.

Measure Phase

Data Collection

Weekly AHT data was collected for individual Customer Services Representatives (CSRs) for same 2-month period. The population was restricted to CSRs with over one year of experience, and only those with 100 or more calls for a given week. Data was collected from the current Performance Plus reporting system used to provide performance feedback to CSRs at all Company X contact centers.

Current Performance

Current performance is viewed through two lenses; one is in comparison to the MCO contact center performance and the second in comparison to the currently established target at SM.

Comparison to MCO

Using the collected data, Table 2 was constructed to display descriptive statistics for AHT by contact center. The data displayed shows there is a mean difference of 12 seconds between centers, with SM being the higher.

Call Center	N	Mean	Median	Std Dev	Min	Max
MCO	345	299.58	297	51.22	179	450
SM	112	312.38	303	43.96	220	431

Table 2. AHT Descriptive Statistics by Center

A two-sample t-test was conducted to confirm that the mean difference is statistically significant. The results confirmed a significant difference with a p-value of 0.011.

[1]Saving calculated using current cost-per-second and forecasted 2004 CGO call volumes at the SM contact center, assuming a 12 second AHT reduction

Comparison to Current Target

During the initial rollout of the Operational Excellence initiative an AHT target of 310 seconds was established for the CGO customer service queue at SM. Figure 1 displays the results of a process capability analysis of AHT with an upper specification limit of 310 seconds. The overall expected performance is 494,727 DPM, meaning that nearly half of CSRs are expected to have an AHT over the established target.

The distribution of the data suggests that there may be special cause variations impacting the results. This will be explored and discussed in the analysis section of this report.
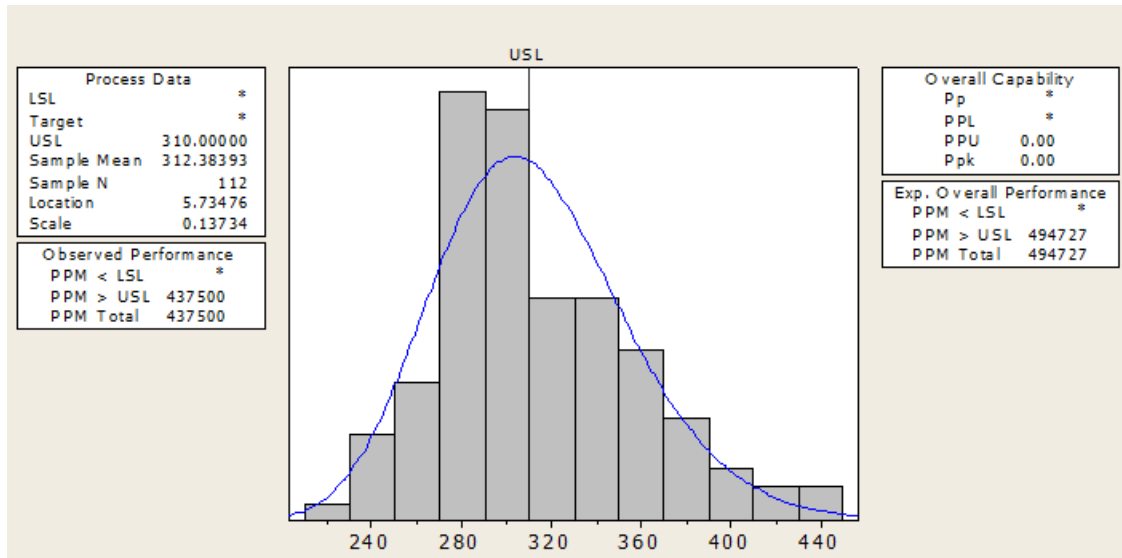

Figure 1. Process Capability of CSR Average Handle Time @ Target AHT

Interviews were held with contact center CSRs and management staff to identify potential drivers of increased AHT and areas of improvement. The interviews provided valuable insight in identifying potential sources of special cause variations.

Potential sources for increased AHT are displayed on the cause-and-effect diagram in Figure 2.
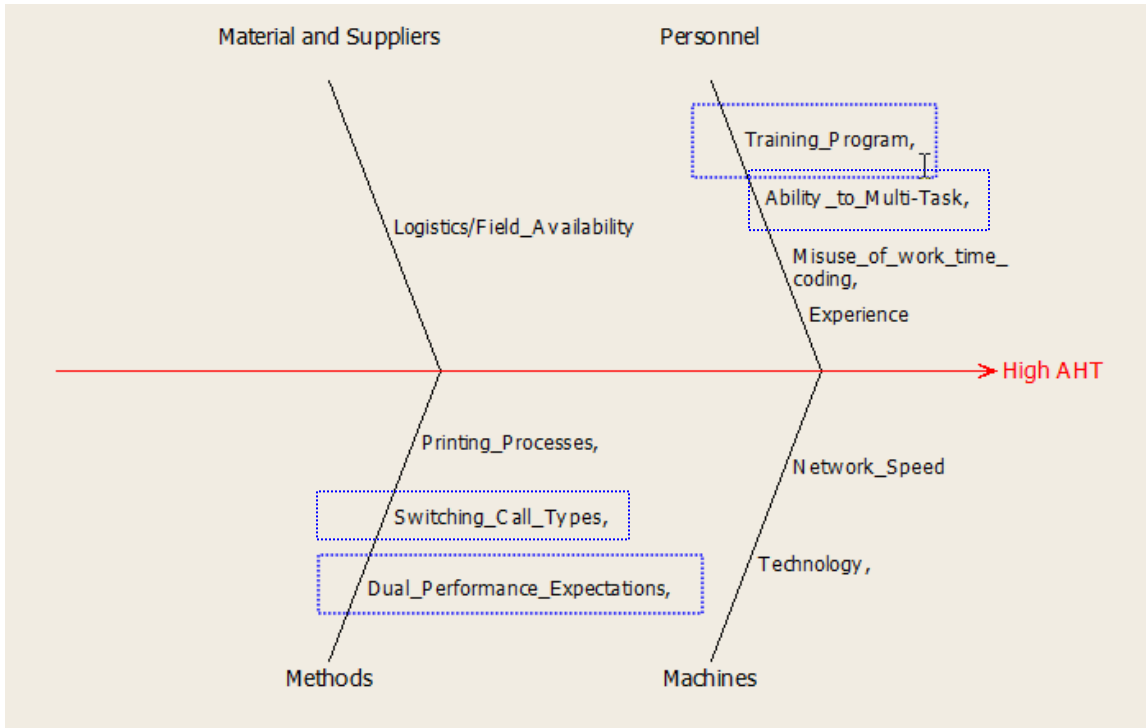
Figure 2. Cause-and-Effect Diagram

From the identified potential causes, likely root causes were identified. Potential causes were reviewed to insure there were no major gaps in technology and processes between the MCO and SM contact centers. An important difference in training existed, in that all CSRs at the MCO center were trained using an electronic reference tool.

Target Performance Level

SM's current contact center level AHT for the CGO customer service queue is at 312 seconds, we wish to reduce this time by a minimum of 12 seconds to match or improve on the MCO contact center performance of 300 seconds.

Analysis Phase

Analyze Gaps

AHT Stratification: SM and MCO Contact Centers

As part of the Operational Excellence initiative the components of AHT were defined and tracked for reporting at the CSR level in the Performance Plus database and reporting system. The three key components are talk time, work time and hold time. Table 4 displays the components of AHT.

Handle Time Stratification	MCO	SM	P Value Two Sample t-test
N	345	112	
Mean Talk Time (seconds)	223	217.3	0.175
Mean Work Time (seconds)	67.5	84	0.000
Mean Hold Time (seconds)	9.1	11	0.025

Table 4. AHT Stratification Results

Stratification of AHT enables comparison by component. The analysis shows that there is no significant difference in the talk time component, however there are significant differences in the work time and hold time components. Figure 3 displays box plots of the talk time, work time and hold time components. The plots demonstrate the distribution of data, outliers and quartiles. It is worth noting that both centers have a significant number of outliers in the work and hold time components that warrant further investigation.
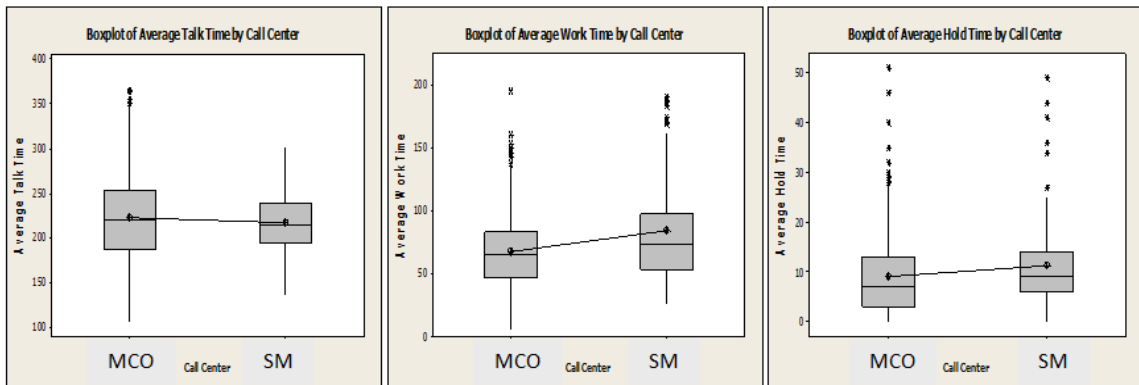

Figure 3. Box Plots of Average Handle Time Components

Again, the analysis shows that the work time and hold time components are the drivers causing the difference in handle time between the two centers, and is an area of improvement opportunity for the SM contact center.

AHT Analysis: SM Contact Center, Internal

As indicated in the measure phase of the report, the distribution of SM's AHT performance indicates there are special cause variations; two or more distributions represented in the data set.

Interviews with the contact center manager, team leaders and CSRs revealed two likely sources of special cause variations. The first is the use of a new training program focused on the use of an electronic support system; the second is that target performance expectations are not consistent with established targets.

Special Cause: Training Program

The training program was revised to use the "Call Aid" 20 months prior to the time of the data sample used in this analysis. With this in mind, SM's CSRs were segmented into 2 groups; group one 12-20 months and group two > 20 months. We found that there was a statistically significant difference in the average handle time between the two groups, with the sample mean for the 12-20 month group being 17 seconds lower than the over 20 month group and a tighter performance distribution. Stratification of the handle time into the components of talk, work and hold time did not reveal statistically significant differences. It is the "stack-up" of the components that is statistically significant.

	Group 1 12-20 Months	Group 2 >20 Months	P Value Two Sample t-test
N	44	68	
Mean Handle Time (seconds)	301.8	319.2	0.036

Table 5. Training Method Segmentation Results

Special Cause: Target Performance

While we see a statistically significant difference in the groups based on the new training methods analysis, there appears to be an additional special cause. Figure 4 displays a histogram for the two training method groups. For both groups it is evident that a high number of occurrences are observed in the two bins spanning 270 to 310 seconds and the distribution is skewed right. As identified in figure 1 in the measurement phase section of this report, the established target AHT for this call type is 310 seconds, which is likely a factor in driving the high occurrences in these bins. Also, the large number of occurrences above this target is of concern.
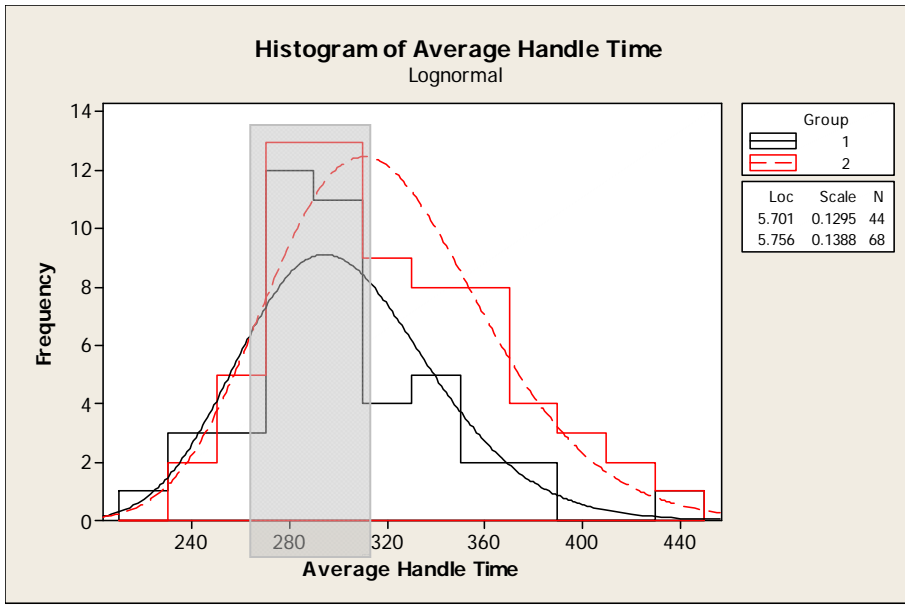
Figure 4. Histogram of AHT by Training Methods Group

The potential root cause of target performance expectations not being consistent with established targets was identified in meetings with the contact center manager and team leaders. With the initial rollout of the Operational Excellence initiative, AHT targets were rolled out to the centers and guidelines were communicated to team leaders on when to initiate administrative action for those not meeting individual targets; this was set at 150% of target. The guidelines established were intended to allow team leaders to set expectations and coach team members to reach the established target. Bi-weekly performance reports and trending information is provided for use in these efforts. The guidelines were not intended to replace the established target.
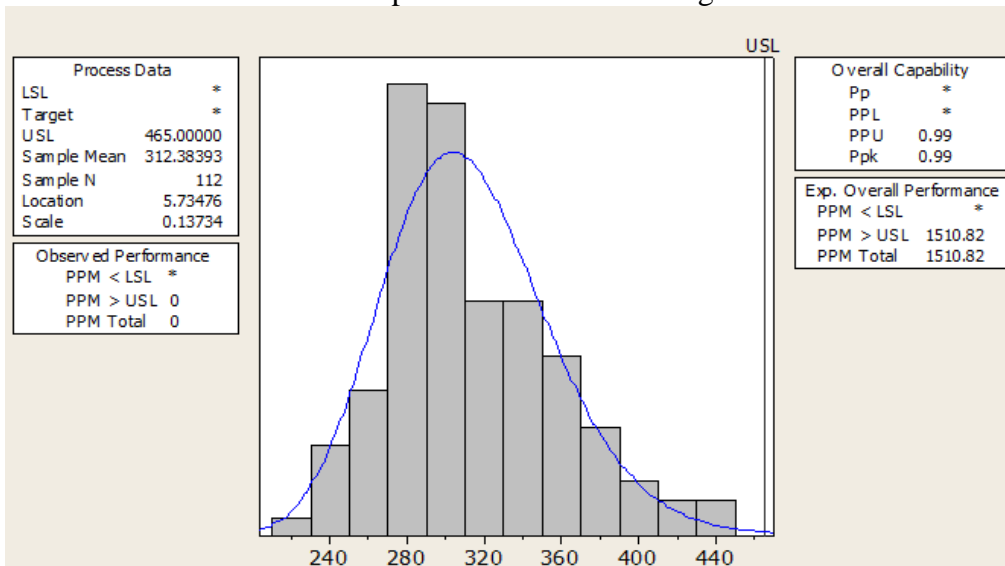

Figure 5. Process Capability of CSR Average Handle Time @ 150% of target AHT

Figure 5 displays the results of a process capability analysis of AHT with the 150% of target (465 seconds) used as the upper specification limit. The DPM is reduced to 15,111

from the 494,727 DPM at the 310-second target, indicating that this has become the target for some individuals. Meetings with the contact center manager and team leaders confirm that the 150% guideline has become the performance target for a number of individuals in the contact center.

Next, stratification by team leader was conducted to determine if there were differences in performance by team. Figure 6 displays a box plot of the data for each team and indicates that there are performance differences between teams. A test for equal variance was conducted; figure 7 displays the results. The test rejects the hypothesis that the variances are equal[3]. To confirm that the team results were not impacted by an unequal distribution of training method groups, the test was also ran by team and training group to insure that there was not an issue with representative sampling. The results were consistent, indicating performance variances between teams. Do to the statistically significant variance difference the ANOVA test results are not included in this analysis.
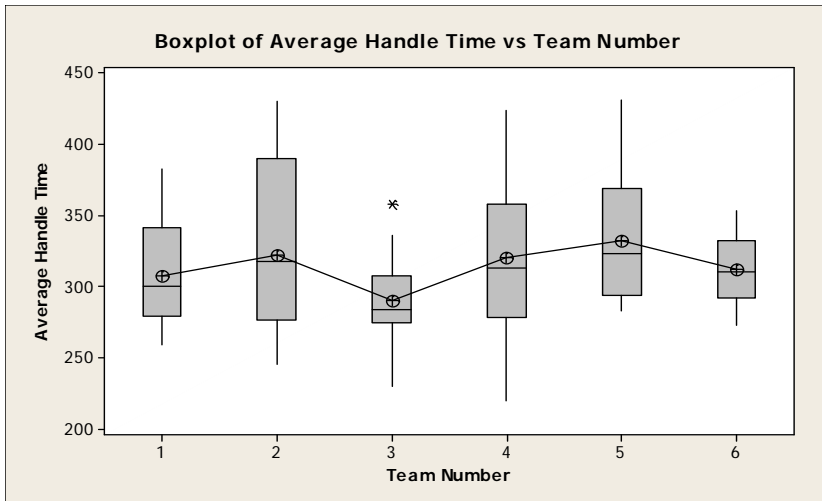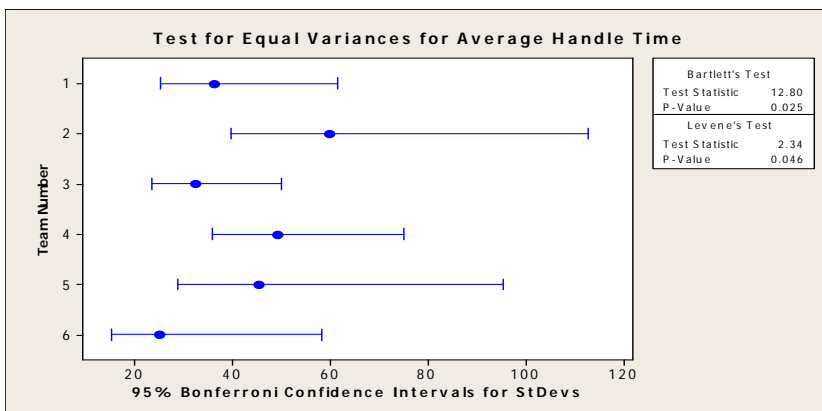

Figure 6. Box plot of AHT Performance by Team

Figure 7. Test for Equal Variance Results by Team

A common concern when focusing on quantitative measures and targets is the impact on qualitative measures. For this reason soft skill and technical skill quality assurance scores were plotted against AHT to determine if a correlation existed.

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[3] The Levene's test results are used due to the non-normal distributions.
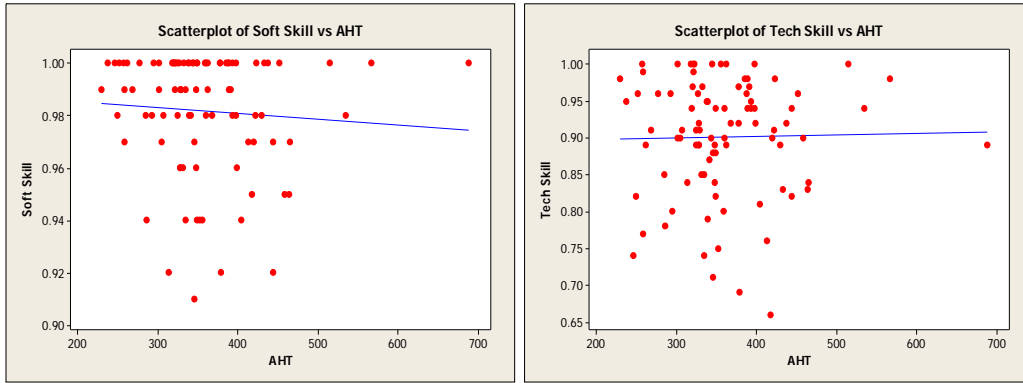
Figure 8. Scatter plot of quality assurance soft and technical skills vs. AHT

The scatter plots displayed in figure 8 show that there is no correlation between the quality assurance scores and average handle time within the range of the data set. The 310-second CSR AHT target is in a robust operating range of the quality measures.

Summary

The analysis shows that there is a statistically significant difference in the average handle time between the MCO and SM contact centers, with stratification showing the differences are in the work and hold time components. Internal analysis of the SM contact center revealed that two sources of special cause variations exist, training program methods and differences in target performance expectations. Also identified are differences in the variance of AHT performance by team. And the average handle time, for the data set, is not correlated to quality assurance results.

Improve Phase

The objective of the recommendations is to improve SM's current average handle time performance for CGO calls and to reduce performance variation between teams. The following actions are recommended:

1. Call Aid training for CSRs not initially trained with the Call Aid tool
2. Revision and / or elimination of the 150% of target guideline
3. Continued review of CSRs identified as performance outliers
4. Increased analysis support from Performance Management team

Call Aid training will address the special cause variation identified in CSRs receiving this method of training when compared with those who have not. Interviews with high and low performing CSRs indicate that the ability or practice of multi tasking is a key driver to improved work time. Training on the electronic call aid, which will include its navigation will help in this area.

The 150% of target guideline should be progressively reduced, with the goal of elimination, to prevent multiple target expectations in the center. Discussions with team leaders also suggest that work time is used by some CSRs inappropriately, which should be reduced by revising the target guidelines.

Work and hold time need to be a focus of improvement. While technology and process are the same for both MCO and SM this is an area of significant performance difference. This should be an area of continuous improvement efforts.

The Performance Management team will continue to provide analysis to include the identification of outliers and team performance.

Control Phase

Training with the on-line electronic call aid is established as a training requirement for all CSRs.

A primary control tool will be the CSR bi-weekly performance report, which contains their individual AHT performance as well as the AHT components, talk, work and hold times. Monthly trending reports will also be made available at the CSR and team lead level for review by management. In addition, review of AHT performance will be held each month in one of the contact centers weekly protocol meetings.

Management staff will also utilize real time tools. After call work will be monitored through the center's ACD system with alarm thresholds set to identify individuals exceeding the normally expected time in AHT component states. Using the CC Pulse tool, team leaders will review daily-accumulated time in each phone state for each of their team members.

Conclusion

The SM contact center has historically operated with the highest average call handle time (AHT) in the system. Since the enterprise wide Operational Excellence (OE) initiative started in 2002 great progress has been made in establishing common metrics, reporting systems, technology and process at each contact center allowing for valid comparison between centers handling the same population of calls randomly distributed.

A comparison of AHT between the MCO and SM centers indicated a significant difference exists between the centers. Further analysis shows that the work and hold time components of AHT are the significant areas of difference.

Internal analysis identified two drivers of special cause variation. First, the use of a new training method focused on the use of the electronic support system (Call Aid); the second being target performance expectations not always consistent with established targets.

Analysis and recommendations were shared with the contact center manager and team leaders mid February 2004. Call aid training is currently underway for CSRs not initially trained using the new training method. The management team decided, as a first step, to reduce the 150% of target guideline to 125% of target to begin administrative action.

The identified key output indicators impacted are cost-per-call, average speed of answer, and customer satisfaction. Preliminary AHT results at the beginning of March show improvement at the contact center level, which indicates the efforts are impacting performance of other call types. If this holds true, savings could be more than double the initial objective.