Lean Six Sigma Green Belt

Project title: Bank Call Center

Submitted By:

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Introduction

First Wealth Bank had outsourced its customer interactive services operations to Customer Calling Services (CCS) about 5 years ago. First Wealth Bank guaranteed minimum volume of 300,000 calls per year with the rate of $4.50 USD. Over the last two years, the service performance of CCS has deteriorated to such an extent that First Wealth Bank is considering cancelling the contract. CCS has been collecting the data on the duration the representatives were available to answer the calls and the hold time. The data for the last few months is shown in Table 1. The performance measures that were of interest to First Wealth Bank were:

1. Provide first call resolution to at least 75% of calls
2. Resolve minimum 90% of inquiries within 5 days

Furthermore, First Wealth Bank was monitoring the data on number of people who were unable to get answers from CCS.
The Quality Assurance (QA) department conducts regular inspections of recorded conversations between the callers and representatives. A rating based on the scale of 1-5 is assigned to the calls based on friendliness, accuracy, and suitable advice given to the callers. The table below shows the description of ratings:

Ratings	Definition
1	Perfect response
2	Good response
3	Average response
4	Poor response
5	Very bad response

It has been observed that the quality check results of the two QA analysts, John and Miranda, vary sometimes. Therefore, data for 20 voice recordings was

collected to verify the repeatability and reproducibility of QA activities. Table 2 shows the results of their assessments for each voice recording. A couple of other problems with CCS are their inability to hold on to the experienced workforce and the time it takes to hire experienced individuals. CCS decides to hire an expert on Six Sigma methodology to help them improve the call center operations and to improve the performance to a level that is acceptable to the client. CCS also wants to ensure that the Average Handle Time (AHT) is maintained during the course of this project. CCS has 6-8 months to turn around the performance of the company or potentially lose contract.

Data Tables:

Table 1

HISTORICAL BASELINE DATA (Table 1)							
Month	Number of Reps	Number of Calls	AHT	First Calls Resolution	5 Day Resolution	FCR %	5DR %
Jan-14	20	22,858	4.17	16,458	15,822	72.0%	69.2%
Feb-14	20	28,963	3.40	22,910	22,092	79.1%	76.3%
Mar-14	20	23,070	4.91	15,826	16,697	68.6%	72.4%
Apr-14	19	29,933	2.46	26,375	21,454	88.1%	71.7%
May-14	19	26,633	4.49	15,554	19,663	58.4%	73.8%
Jun-14	19	27,638	3.97	21,266	20,788	76.9%	75.2%
Jul-14	19	24,553	2.93	23,167	20,136	94.4%	82.0%
Aug-14	20	29,897	3.27	19,913	22,544	66.6%	75.4%
Sep-14	20	23,418	4.05	16,346	18,788	69.8%	80.2%
Oct-14	21	22,901	3.89	18,756	14,910	81.9%	65.1%
Nov-14	20	22,250	5.59	15,308	15,301	68.8%	68.8%
Dec-14	20	27,482	4.02	16,324	22,585	59.4%	82.2%
Jan-15	20	24,599	4.67	20,366	17,138	82.8%	69.7%
Feb-15	20	26,413	3.14	25,281	15,187	95.7%	57.5%
Mar-15	19	24,840	4.87	16,221	17,691	65.3%	71.2%
Apr-15	19	27,011	3.43	17,368	17,708	64.3%	65.6%
May-15	18	21,166	4.85	17,400	14,749	82.2%	69.7%
Jun-15	18	28,871	3.62	26,417	21,618	91.5%	74.9%
Jul-15	17	24,515	4.19	21,003	19,949	85.7%	81.4%
Aug-15	19	21,244	3.73	14,573	14,191	68.6%	66.8%
Sep-15	20	29,950	4.02	23,766	22,833	79.4%	76.2%
Oct-15	20	21,387	6.08	14,950	14,990	69.9%	70.1%
Nov-15	20	23,906	3.57	18,848	19,047	78.8%	79.7%
Dec-15	20	27,199	4.03	24,115	24,258	88.7%	89.2%

Table 2

Table 2					
Voice Sample	Master Appraiser	John Trial 1	John Trial 2	Miranda Trial 1	Miranda Trial 2
1	3	3	2	3	3
2	2	2	2	2	2
3	2	2	2	2	2
4	4	4	3	4	4
5	2	1	1	1	1
6	5	5	4	5	5
7	4	4	4	5	4
8	3	3	2	3	3
9	3	3	3	3	3
10	4	4	5	4	4
11	2	2	1	2	2
12	3	3	3	3	3
13	5	5	4	5	5
14	2	2	2	2	2
15	2	2	2	2	2
16	2	2	2	2	2
17	2	2	2	2	2
18	4	4	3	4	3
19	3	3	3	3	3
20	2	2	2	2	2

Tasks

Read case study then answer the following questions:

Task 1

Process capability Indices

Using the data given in Table 1, determine the process capability indices for performance metric. Provide the appropriate interpretation for the process capability indices drawn, based on the available data.

A. First Call Resolution'. The specification limits for the FCR are; LSL=75% and USL=100%.

First Calls Resolution:
16,458
22,910
15,826
26,375
15,554
21,266
23,167
19,913
16,346
18,756
15,308
16,324
20,366
25,281
16,221
17,368
17,400
26,417
21,003
14,573
23,766
14,950
18,848
24,115

A) FCR are; LSL=75% , USL=100%		
USL	=	1
LSL	=	0.75
MEAN	=	19,521
SD	=	3850.376046
CP	=	1.08215E-05
Cpu	=	-1.689903483
Cpl	=	1.689925125
Cpk	=	-1.689903483

B. '5 Day Resolution'. The specification limits for the 5DR are; LSL=90% and USL=100%.

5 Day Resolution
15,882
22,092
16,697
21,454
19,663
20,788
20,136
22,544
18,788
14,910
15,301
22,585
17,138
15,187
17,691
17,708
14,749
21,618
19,949
14,191
22,833
14,990
19,047
24,258

B) 5DR are; LSL=90% , USL=100%		
USL	=	1
LSL	=	0.9
MEAN	=	18,758
SD	=	3084.057921
CP	=	5.40414E-06
Cpu	=	-2.027338888
Cpl	=	2.027349696
Cpk	=	-2.027338888

Task 2

A. What kind of data is shown in Table 2? Which method would you use for measurement system analysis (MSA) to verify the repeatability and reproducibility of QA results? Conduct the appropriate MSA.

#	Jhon trial 1	Jhon trial 2	Within Jhon	Jhon with standard
1	3	2	0	0
2	2	2	1	1
3	2	2	1	1
4	4	3	0	0
5	1	1	1	0
6	5	4	0	0
7	4	4	1	0
8	3	3	1	0
9	3	3	1	1
10	4	5	0	0
11	2	1	0	0
12	3	3	1	1
13	5	4	0	0
14	2	2	1	1
15	2	2	1	1
16	2	2	1	1
17	2	2	1	1
18	4	3	0	1
19	3	3	1	1
20	2	2	1	1
		#Matched	13	11
		#Inspected	7	9
		%Agree	**65%**	**55%**

#	Miranda trial 1	Miranda trial 2	Within Miranda	Miranda with standard
1	3	3	1	1
2	2	2	1	1
3	2	2	1	1
4	4	4	1	1
5	1	1	1	0
6	5	5	1	1
7	5	4	1	0
8	3	3	1	1
9	3	3	1	1
10	4	4	1	1
11	2	2	1	1
12	3	3	1	0
13	5	5	1	1
14	2	2	1	1
15	2	2	1	1
16	2	2	1	1
17	2	2	1	1
18	4	3	0	0
19	3	3	1	1
20	2	2	1	1
		#Matched	19	16
		#Inspected	1	4
		%Agree	**95%**	**80%**

Test Samples	Master	Between Ops	All Ops versus
1	3	0	0
2	2	1	1
3	2	1	1
4	4	0	0
5	2	1	0
6	5	0	0
7	4	0	0
8	3	0	0
9	3	1	1
10	4	0	0
11	2	0	0
12	3	1	1
13	5	0	0
14	2	1	1
15	2	1	1
16	2	1	1
17	2	1	1
18	4	0	0
19	3	1	1
20	2	1	1
		11	10
		9	10
		55%	**50%**

B. Determine the potential causes why CCS fails to meet First Call Resolution targets consistently.

Decision	Effectiveness	Miss Rate	False Alarm Rate
Acceptable for the appraiser	> 90%	< 2%	< 5%
Marginally acceptable for the appraiser	80% to 90%	2% to 5%	5%to 10%
Unacceptable for the appraiser	< 80%	> 5%	> 10%

Based on Attribute Data sheet, we found that all Ops equals less than 80%. Therefore, I don't recommend to using this MSA.

C. Brainstorm and propose solutions for elimination of causes for failure to meet FCR targets.

- They should hire expert or who has the experience on this filed.
- They should determine what is the causes of delay or wrong advises the customer informed from CSS
- They should eliminate wrong advises
- They should trainee CSS team and coach them.

Task 3

FMEA

Identify potential failure modes and their effects for the solutions proposed in Exercise 2 using learning on FMEA.

Process step	Potential Failure Mode	Potential Failure Effects	Potential Cause(s) of failure	OCC	DET	SEV	RPN	Current Controls
Call center process: 1.Pick a call 2.Answers 3.Transfer a call (optional) 4.end the call	Wrong advise & information's.	Unhappy customer	CSS without experience	9	1	**9**	**81**	CSS tries to hold on to the experienced workforce staff.
			CSS not knowledgeable of their services.	8	3		**216**	Assign two QA analysts to verify the repeatability and reproducibility of QA activities.