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End User Support: Process Quality Assurance

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Abstract:
End user support is the front line contact for IT support, for all the employees in Xyz Company. A combination of effective business processes and man power is necessary to deliver good customer experience. This paper presents how DMAIC framework can be used to develop and deploy a robust Quality assurance plan, which will help in improving the effectiveness of the business processes.

Keywords: *DMAIC, Quality assurance, IT industry*

1. Introduction

Year 2004 Xyz company was about to file bankruptcy. ABC Company pulled them out by lending X amount with a clause stating Xyz Company should outsource there IT services to ABC Company for 10 years. Close to 14000 employees were working under Xyz company and ABC company were charging Y$ amount per employee per month for their service and applications. Year 2012 IT infrastructure and cloud services was formed and this department initiated the migration phase i.e shifting from ABC machines to open source machines. End user support and service desk was a telephone support team deployed under IT infrastructure and cloud services to help the open source machine users by taking control over their system remotely.The current process lacks predictability in terms of the monitoring, analyzing and arresting the defects resulting in escalations. Our aim is to reduce the number of escalations by defining quality requirements as per standard operation procedure and deploying quality control process.

2. DMAIC

DMAIC (Define, Measure, Analyze, Improve, and Control) alludes to information driven life-cycle methodology to Six Sigma ventures for enhancing methodology; it is a key piece of an organization's Six Sigma program. DMAIC is an acronym for five interconnected stages: define measure, analyze, improve and control. The streamlined meanings of each one stage are:

- define by distinguishing, prioritizing and selecting the right extend,
- measure key procedure trademark, the extent of parameters and their exhibitions,
- analyse by recognizing key causes and procedure determinants,
- improve by changing the methodology and streamlining execution,
- Control by maintaining the gain.

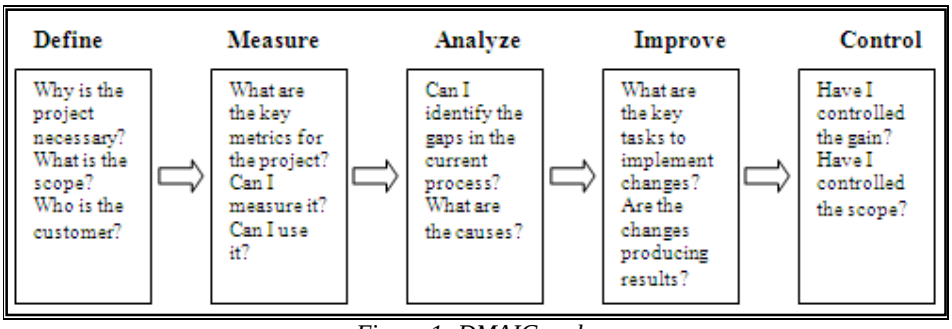

Figure 1: DMAIC cycle

2.1. Define phase

2.1.1. SIPOC

In procedure change, a SIPOC is a device that outlines the inputs and yields of one or more courses of action in table structure. The acronym SIPOC stands for suppliers, inputs, process, outputs, and customers which form the columns of the table. It was being used at any rate as ahead of schedule as the Total Quality Management projects of the late 1980s and keeps on being utilized today within Six Sigma.

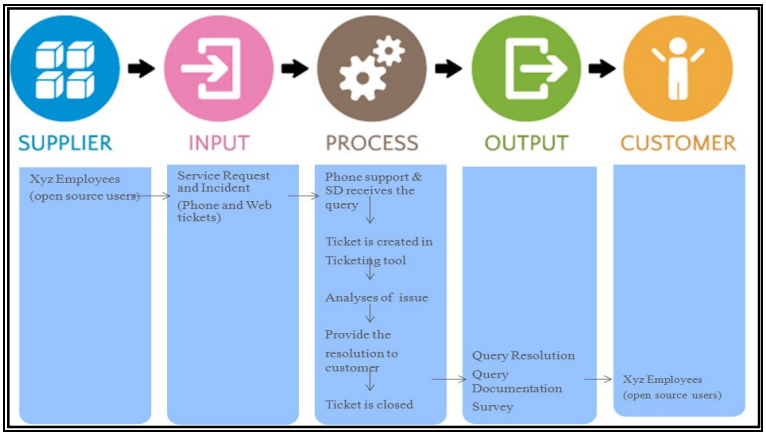

Figure 2: SIPOC

2.1.2. Call Flow Chart

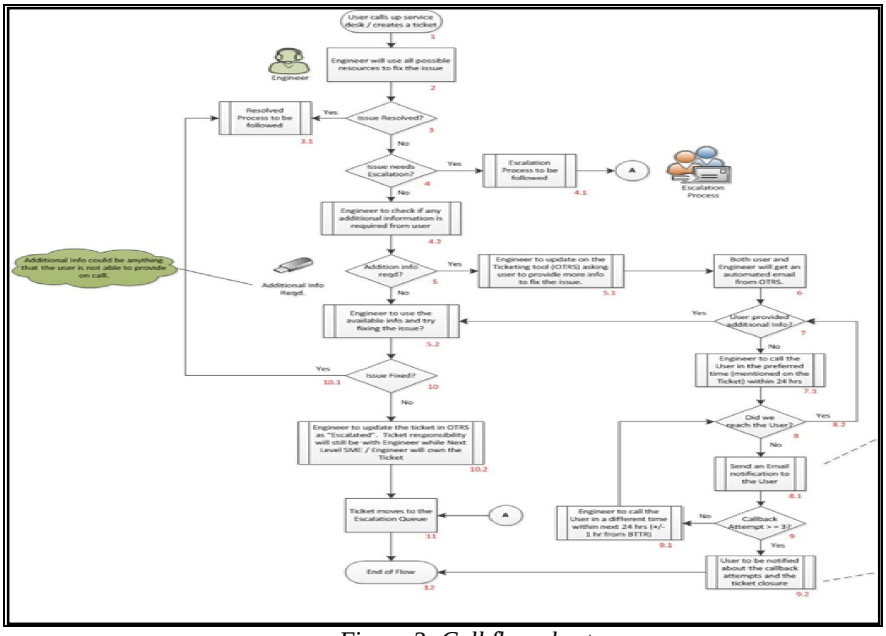

Figure 3: Call flow chart

2.2 Measure phase

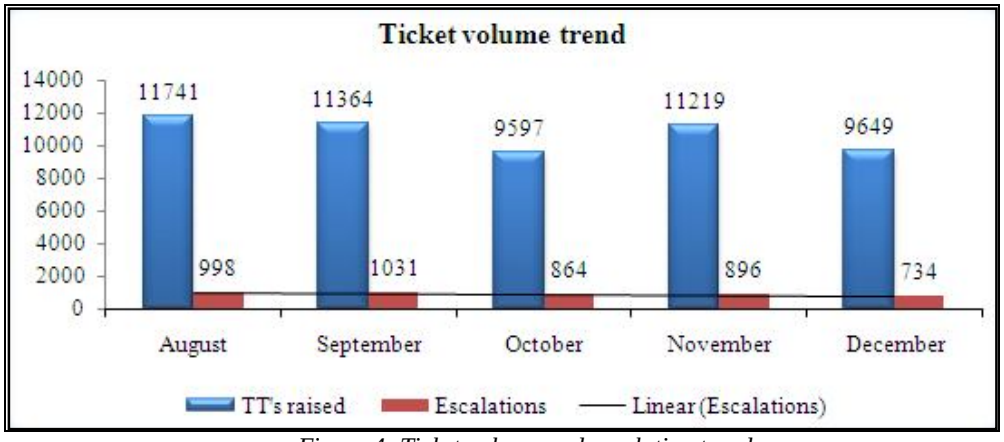

Figure 4: Ticket volume and escalation trend

The data collected shows that the escalation rate is between 8-9% every month. Next step should be to analyse why is that the escalation rate is so high.

2.3. Analyse Phase

2.3.1. Fishbone analysis

At the point when using a group methodology to critical thinking, there are frequently numerous feelings as to the issue's main driver. One approach to catch these diverse plans and invigorate the group's conceptualizing on main drivers is the circumstances and end results graph, usually called a fishbone. The fishbone will help to outwardly show the numerous potential foundations for a particular issue or impact. It is especially valuable in a gathering setting and for circumstances in which minimal quantitative information is accessible for examination.

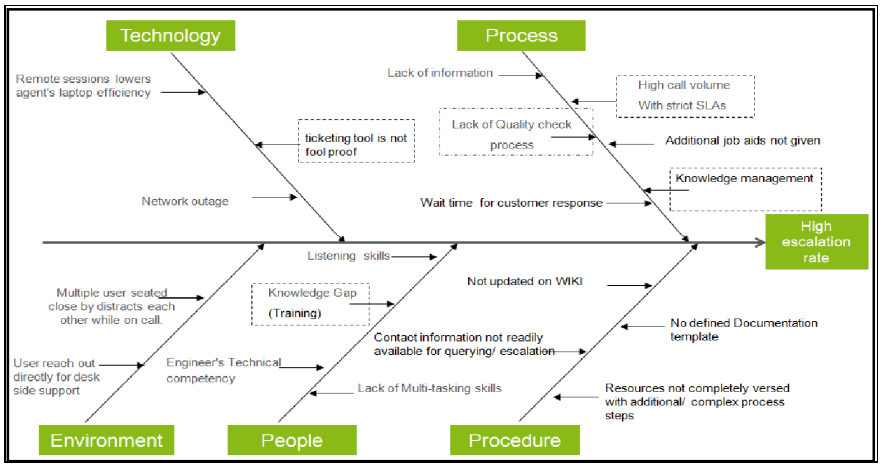

Figure 5: Fishbone Diagram

2.3.2. Prioritization of Causes

Pareto Chart clearly indicates that a large portion of our accuracy issues are because of the lack of an effective Quality Management Process. Top 4 causes contribute to 85% of the overall causes for high defect rate.

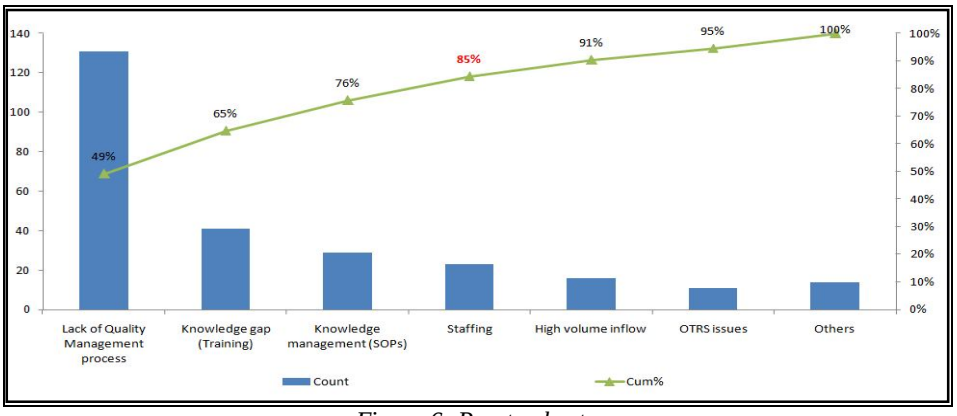

Figure 6: Pareto chart

2.4. Improve phase

2.4.1. Action plan

Action Category	Action Plan	Owner	Status
Staffing & Workload allocation	• Inflow pattern studied to ensure optimal staffing at peaks • Cross functional training plan in place to enable resource sharing • Aged and Fresh tickets are monitored by TL/SME frequently	Supervisor	Completed
Knowledge Gap(Training)	• Brainstorming session conducted with the agents on the reasons for defects • Plan to improve process knowledge of the agents by frequent huddles to • Improve communication & technical skills, based on the inputs from the brainstorming • Monthly trainings conducted based on the topics collected from the Agent feedback form	Team Lead	Completed and Ongoing
Knowledge management	• Knowledge portal refreshed with information, based on the recent trend of issues (top issues) • List of FAQ's refreshed and used as an additional job aid while providing resolution	Team Lead/ SME	Completed and Ongoing
Quality Check Process	• Skill requirements for Quality Analyst identified, calibration on QC performance to ensure effectiveness • List of key attributes identified to be a part of the Quality check sheet • Started with random sampling and then moved to AQL based sampling approach • Structured CAPA process defined for every defect (Corrective Action and Preventive Action), to ensure learning from historic defects	Team Lead/ SME	Completed and Ongoing
IT Interventions	• A list of IT enhancements on Ticketing tool were identified and suggested to the IT team, to make it robust and fool proof	IT Development Team	WIP

Table 1: Action plan

2.4.2. Current state

Almost all aspects of Quality Management require significant improvement as identified through internal assessments.

Measurement system	No criteria for selection of Quality Analysts. Skill requirements for QAs not identified. No calibrations in place. No measure of QA performance and effectiveness. External defects reported but internally no defects are detected.
Quality planning	Approach to QC is ad-hoc and unstructured. Customer defined QC requirements (SOW) and Customer Satisfaction survey results not fully aligned to internal QC process. QC defined during transition not revisited. Reduction of QC efforts through automation of QC is missing. No in-process controls and in-process job aids in place. No linkage to upstream and downstream processes to improve e2e process quality.
Sampling plan	No structured/scientific approach to sampling. No basis for sampling. Sampling largely determined by customer than the process requirement. Sampling is not consistent with prevailing accuracy level; not dynamically changed to reflect process performance. Defined sampling plans not being adhered to. Maker-Checker model is deficient, with many processes having self QC
CAPA(Corrective and Preventive actions)	Missing operational discipline to update CAPA in a timely manner. RCA and CA are not specific, not complete. Supervisor's involvement/skill in RCA is not adequate. Effectiveness of CAPA through resultant impact of reduction in repeat errors is missing. Better analysis and dashboards on defects – defect categorization, repeat errors, and cycle time for closure.

Table 2: Current state

2.4.3. Framework for Implementation

Measurement System	Quality Planning	Data capture and RCA
1.1 Select Quality Analyst(QA) 1.2 Define Skills and Knowledge requirements for QA 1.3 Train Quality Analyst 1.4 Assess and certify QA 1.5 Perform Measurement System analysis (MSA) 1.6 Monitor QA Performance	2.1 Identify attributes for QC 2.2 Identify critical attributes 2.3 Determine Sampling size 2.4 Validate attributes for QC and Sampling approach 2.5 Define Method of Inspection 2.6 Define Timing of Inspection	3.1 Capture outcome of QC 3.2 RCA and Improvement

Table 3: Framework Structure for Implementation

2.4.4. Agent performance

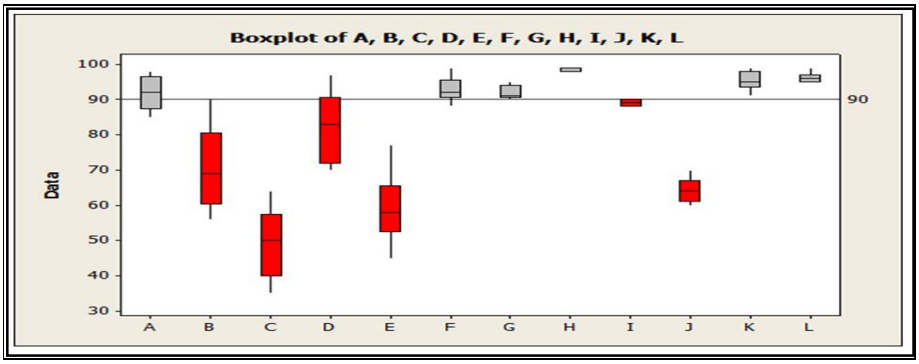

Figure 7: Box plot

The average QC scores of agents B, C, D, E, I, J are less than the target 90%. All these have to be moved up to the first quartile

2.5. Control phase

CONTROL	FREQUENCY	OWNER
REPEATED QUERIES: team huddle and trainings on repetitive queries with low quality score. Addressed by analyzing previously closed cases	Monthly	Team lead
QC & AGEING REPORT: publishing daily reports to the team on the status of the queue and also on the qc scores. Also visual dashboards are setup on the floor	Daily	Team lead
D-SAT ANALYSIS : every dissatisfied response received from the customer feedback survey is analyzed on weekly basis to identify the reasons	Weekly	Leads
QUALITY CHECK : quality monitoring of tickets using AQL sampling methodology , thereby ensuring the team is adhering to the standards and accuracy of the solution	Daily	QC spocs
KNOWLEDGE MANAGEMENT: regular huddles with the team to discuss the month to date metrics, focus areas, action plan. Engage with trainers and facilitate refreshers need based. Also, develop frequently asked questions as knowledge articles, as an ongoing effort.	Monthly	Trainer & lead
COMMUNICATION : in an effort to improve overall customer experience, aim to enhance communication skills/scores by looking at sops, improved responses, mock sessions etc.	Monthly	Communication lead & supervisor

Table 4: Control plan table

3. Conclusion

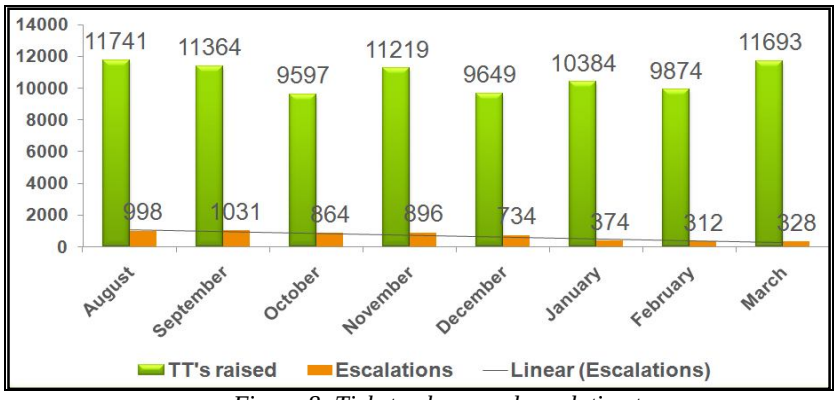

Figure 8: Ticket volume and escalation tr

Here we can observe after implementation of QA plan there is a dip in number of escalations. (From 9% to 3%)
The motivation behind this exploration has been met and the destinations that were set throughout the start of this exploration has been attained. The choice that was taken to acquaint Quality Assurance plan with the help of DMAIC framework to reduce the escalation rate is attained. First contact resolution is a critical indicator for determining how well a organization is serving the customer as well as how efficiently the operations are running. Both of these goals affect organizations bottom line. The challenge lies in finding a quantifiable way of measuring FCR in contact centers, taking into account all the variables unique to our organization. The same above methodology can be used to find the root cause and robust plan can be tailored accordingly to improve first contact resolution.

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