

PURSUING SUPPLY CHAIN SERVICE EXCELLENCE AT A REGIONAL SERVICE CENTRE

YONG FAH YAN¹, TONY HALIM², TAN YAN WENG¹

¹Singapore University of Social Sciences

²Temasek Polytechnic

Abstract

Purpose: This research project is a real-life case study on an international company that specializes in Test and Measurement instruments which provides various services and solutions to customers in the electronic measurement industry. At one of their Singapore Service Centre, there was a substantial dropped in their customer satisfaction scores attributed to frequent customer complaints. The aim of this project is to pursue service excellence in the company's Singapore service centre using six sigma techniques to identify factors that has influence over customer satisfaction as well as to uncover logistic issues that lead to customer dissatisfactions

Design/methodology/approach: The goal of this case study is to provide initiatives to pursue service excellence for the company's Singapore Service Centre. The approach used is to utilise Six-Sigma (DMAIC) methodology as the overarching design and using qualitative and quantitative technique to collect and analyse the data.

Findings: Customers' feedback from survey results are sorted into different categories. Using Pareto analysis, we have identified the main critical factors that contributed to most customer dissatisfaction are service turn-around time (33%), service quality (28%) and communication (20%) whereby customers expect a shorter service time of their equipment with better service quality and more efficient communications. Since service turn-around time (TAT) has the highest impact to customer dissatisfaction, an-depth root cause analysis was performed to identify factors that influenced the service turn-around time, which mainly due to work processes, people, availability of resources (core equipment, tools, parts) and environment issues.

Research limitations/implications (if applicable): In a service center context, delay is unavoidable and cannot be totally eliminated due to unexpected factors such as availability of parts, sudden technical failures on core equipment or traffic conditions, etc.

However, it is important and necessary to keep the customer informed of the order progress and alert them on potential delay.

Practical implications (if applicable): The company recognised the importance of excellent customer service and service quality will creates good reputation, customer loyalty as well growth in business because customers are more likely to return to the business if the company is able to resolve their issues, exceed their expectations and delight them with the service experiences. Hence, with the implementation of three improvement solutions expect to increase customer satisfaction level and service performance in terms of improvement in service turn around, service efficiency and customer experience.

Originality/value: The research is undertaken at a company based in Singapore.

Keywords: Parts Management, Repair center, supply chain management, Six Sigma

Introduction

In today's competitive market, companies need constant enhancement on their services delivery in order to strive for better customer satisfaction and to be stays the leading edge in the industry.

XYZ Company in this research paper is one of the Test and Measurement expertise that manufacture and offer solutions to the communications, aerospace/defence, computer and semiconductor industries. The

organization has about 9,500 employees and 20 service hubs strategically located worldwide to provide sales and post- sales support (repair & calibration services) of their products to their customers.

In order to stay competitive and provide high customer service standards, one of the key strategies the organization adopt is to produce quality work and pursue shorter turns around time in their services so as to minimise customer's production downtime. As such, it is vital for the organization to identify savings opportunities in terms of cost, quality, and rework along the value chain to improve productivity and responsiveness to their customers.

Figure 1 is the illustration of the Order-to-Delivery process in Singapore Service Centre for their Calibration & Repair service.

As the organisation believe and emphasize customers are the heart of the company, the management recognise the importance to gains insight through active listening to identify customer needs and to looks outside in vs inside out, to deliver customer-centric solutions.

However, based on the past quarters customer satisfaction surveys, the ratings on the service level were mediocre and the common issues gathered include:

- Service turn-around-time (TAT) - Can be timeless, especially for repair services
- Customer Communication - Responsiveness and customer Interaction
- Service Quality - Accuracy of the information or reporting
- Price – steep compared to competitors
- Local hub capabilities – need transhipment to other overseas hub, which affect overall service TAT
- Damages – customer's unit damaged due to poor handling and packaging

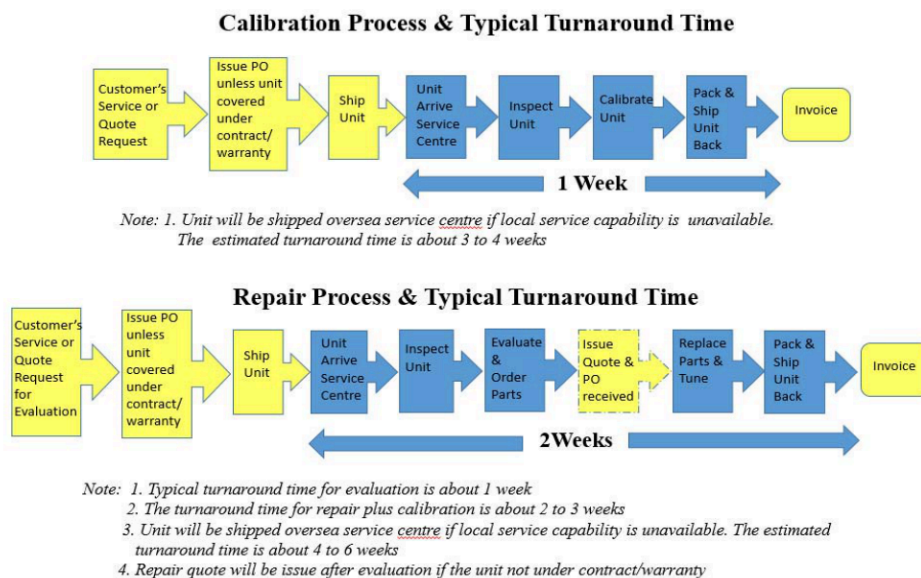


Figure 1: Order-to-Delivery process in Singapore Service Centre for Calibration & Repair

Hence, it is crucial to understand the dynamics and available touch points of the entire process to optimize service efficiency and customer interaction to improve the customer satisfaction.

Research Methodology

In Traettino (2010), a manufacturer of high-quality flow meters and accessories for accurate liquid measurement has applied Six Sigma methodologies to improve their service delivery processes to service their customer better. Along the line of Six Sigma method, a homebuilding business company used the customer satisfaction survey results to measure their current performance and implement changes in their

process to meet their customer needs and expectations (Thomas, 2014). Echoing this, IKEA made use of Six Sigma methodologies and techniques to revamp their existing process workflow to improve their customer service quality and thus successfully reduced the number of customer complaints (Miski, 2016).

Utilising the literature scan, our approach is to utilise Six-Sigma (DMAIC) methodology and tools to analyse the data collected and provide initiatives to improve customer satisfaction level for XYZ Singapore Service Centre.

Data collection for this project mainly will come from primary and secondary sources extracted from the organisation's business system. The primary data consists of the cycle times of an order at each process stage, from the time an order is logged, to when service starts, to the time service completion, to the time equipment shipped. The secondary source data are mainly collected from the Voice-of-Customer (VOC), can be from external or internal customers, via survey, emails, online feedback, telephone interviews and face to face meetings. Both sources can be a mixture of qualitative (text, images) and quantitative (numbers), as many research papers usually collect and combination of these two to obtain better evaluation data.

VOC is a process used to collect customer's requirements/feedback through a survey about the quality and customer satisfaction levels on the services they received. Collecting such data is a key component under Define phase of DMAIC, just like a report card which provides information to the company on their performance in terms of service quality and customer satisfaction level of their service, as well to understand what customers' expectations and requirements from the service they delivered.

XYZ Company carried out customer surveys weekly with an average of about 20 customers randomly selected by the system based on the service orders logged within the past 6 months. Customer was asked to rate with a score of 0 (poor) to 10 (excellent) on the service they received from XYZ. The survey questions ranged from how customer was treated and experience to their perception of the service performance of XYZ in form of speed and quality throughout the entire service of their equipment. Customer is also asked to provide comments or suggestions on how XYZ can improve their service levels.

Results

Customer Satisfaction Trend & Performance

Based on year 2014 monthly survey, the customer satisfaction average rating for XYZ's services was mediocre and some of months the ratings fall below the target as shown below:

Despite of that, most of the customers still satisfied with XYZ's service delivery where 5% ranked as very good, 41% as good and 43% feel Ok, except 11% considered the service received was not so good or bad.

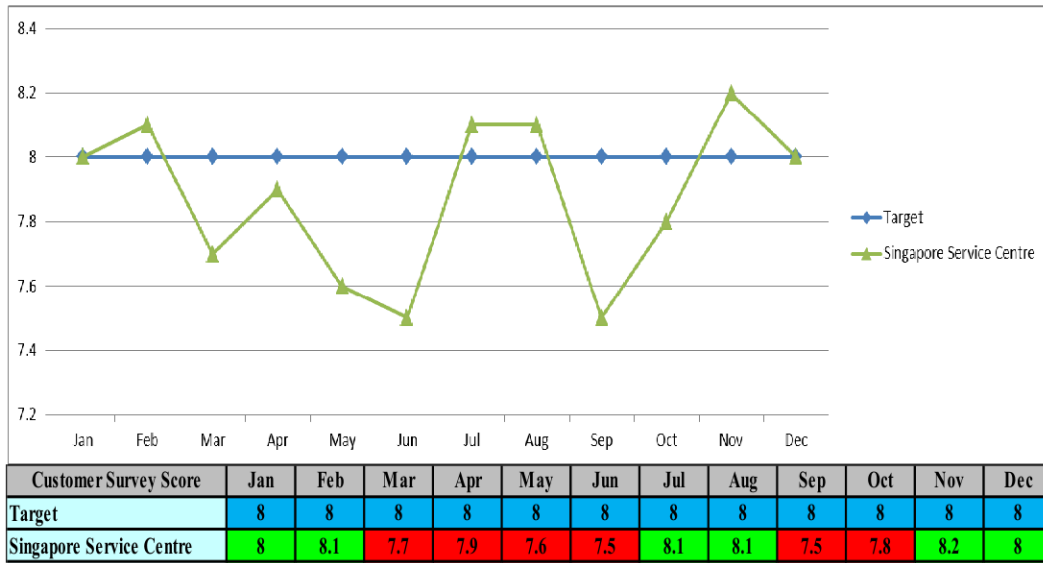


Figure 2: Customer Satisfaction Trend & Performance for Year 2014

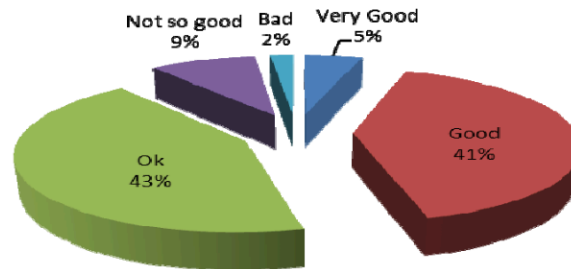


Figure 3: % of Customer Satisfaction on XYZ' Service

In order to analysis what factors that bothers customer satisfaction, XYZ classified the customer feedbacks into the categories as shown in below:

Number	Category	Impact Counts	Percentage %	Average Score
1	Service TAT	73	33%	6
2	Service Quality	62	28%	6.5
3	Communication	44	20%	7
4	Price	14	6%	6
5	End of support	11	5%	3
6	Local capability	8	4%	5
7	Loaner Request	4	2%	4.5
8	On-site request	3	1%	6
9	Quotation format/Delay	3	1%	7
Total		222	100%	

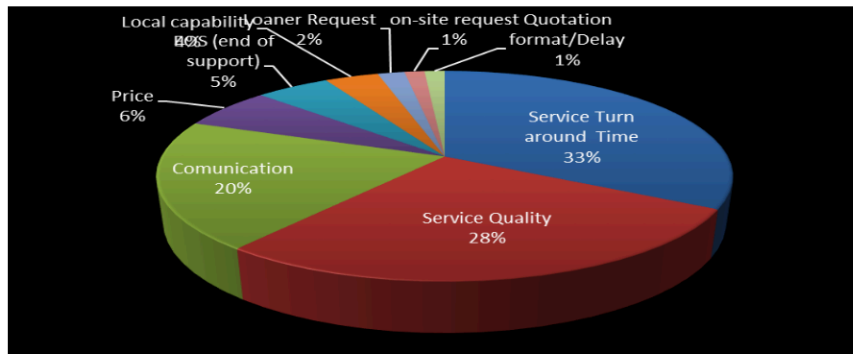


Figure 4: Classification of customer's feedback

Pareto Analysis

Using the breakdown of the customers' feedbacks, Pareto Chart is plotted to identify which are the top critical factors (20%) that contribute most of the customer dissatisfaction (80%). From the chart in Figure 5, we can see the major problems contributed 80% of customer dissatisfaction lies on service TAT (33%), follow by the service quality (28%) in terms of logistic issues and the communication (20%).

We will be focusing on the service TAT since it has the highest percentage and look for improvement opportunity to this issue at roots by using Cause and Effect diagram analysis.

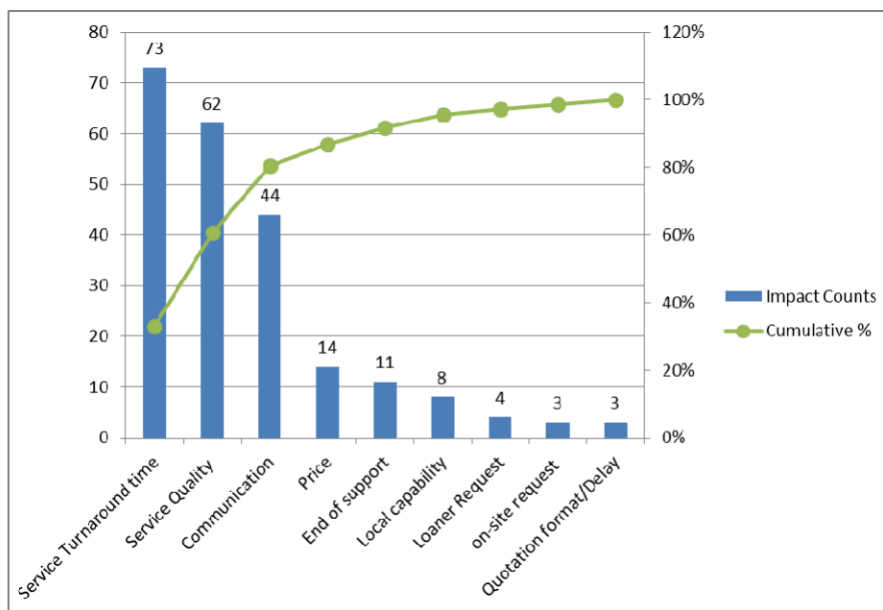


Figure 5: Pareto chart analysis on factors contributes customer dissatisfaction

Cause and Effect Diagram

With the cause and effect diagram, it helps to list down what are the potential causes that contribute and affect the service turn around, and then we will need to look for possible solutions to eliminate these causes.

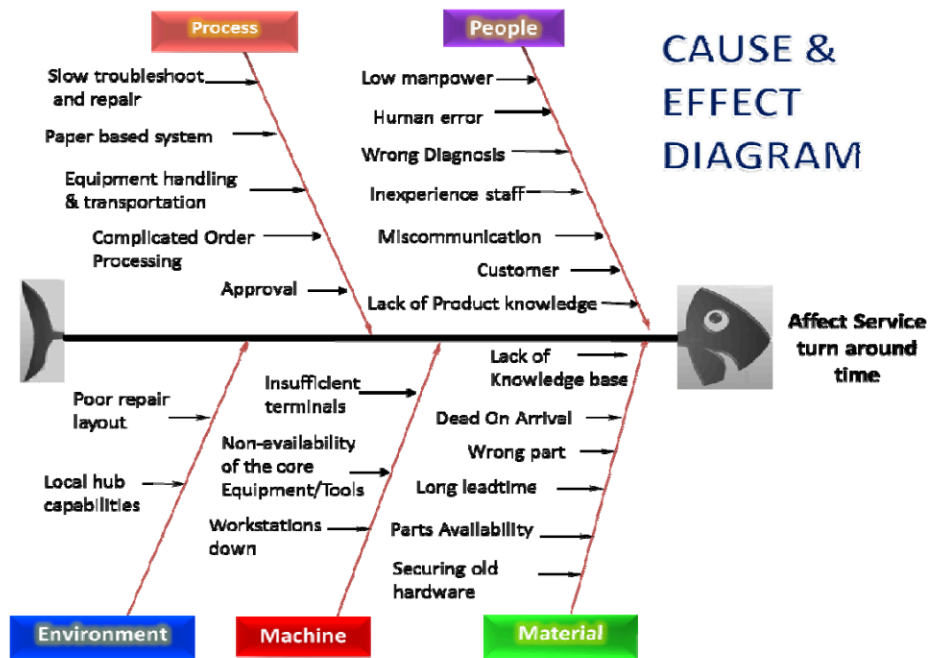


Figure 6: Cause and Effect Diagram

Before looking for improvement opportunities, let's take a look at XYZ normal TAT performance against general customer expectation.

Service type	Normal TAT (local)		Customer expected TAT
Calibration	Within 7 days (72%)	Within 10 days (86%)	Within 3 to 5 days
Repair	Within 7 days (60%)	Within 14days (85%)	Within 7 days

Figure 7: Normal TAT vs Customer Expected TAT

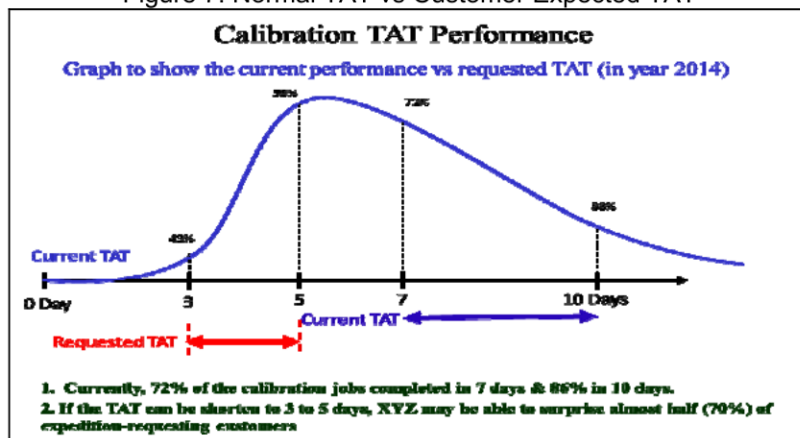


Figure 8: Current calibration TAT performance

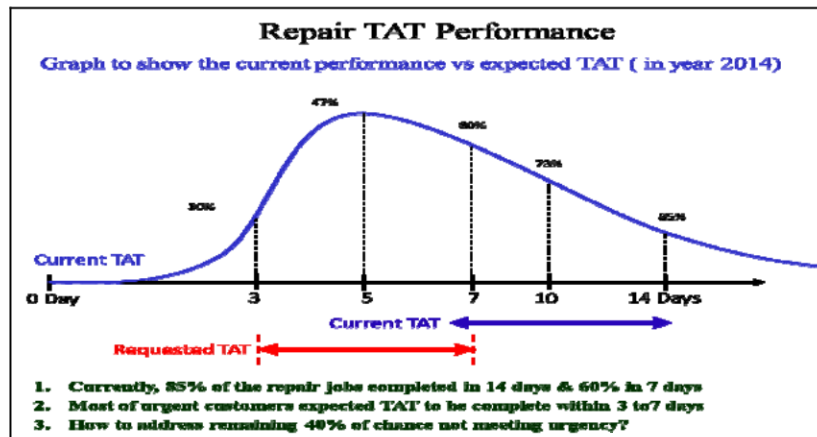


Figure 9: Current repair TAT performance

Through the brainstorming sessions and from perspectives of customer service, service center and logistics, some possible improvement ideas were determined and presented with an affinity diagram as below for management decision on what need to be done.

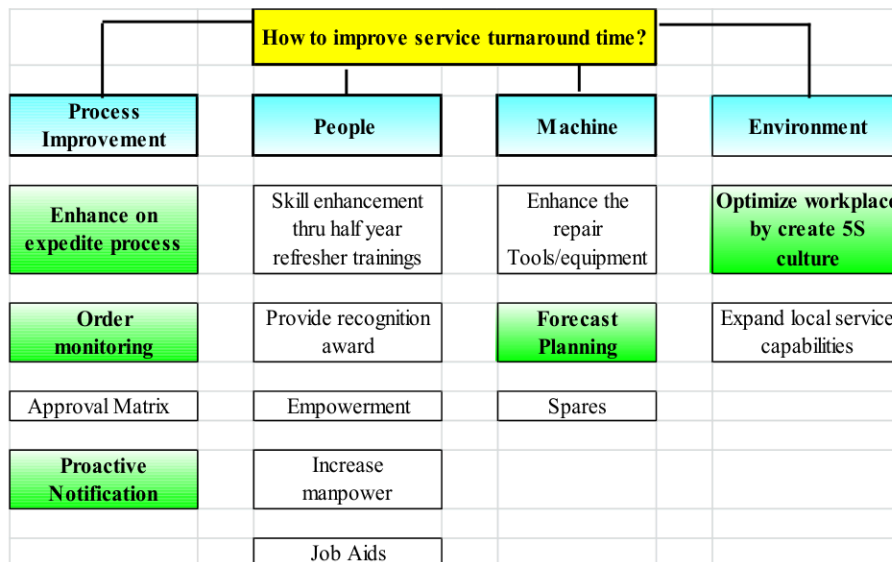


Figure 10: Affinity diagram on possible ideas

Enhancing the Expedite Process

XYZ have been practicing manual TAT expedite process to address customer urgent needs and the expedited TAT will be on best effort basis without firm commitment. Most customers felt satisfied with this best effort when the TAT has been shortened. However, customers felt unhappy when XYZ is unable to provide a no firm commitment on schedule return date or failed to meet their expected return date. Moreover, customers will have to pay extra premium if needs for an express service, which most customers are unwilling to unless otherwise. Hence, it would be a great, from the customer's perspective, if XYZ is able to reduce the general turn-around time or meeting customer's expected date, and yet customers do not have to pay an express premium.

**Current Expedite Process
Before (AS-IS)**

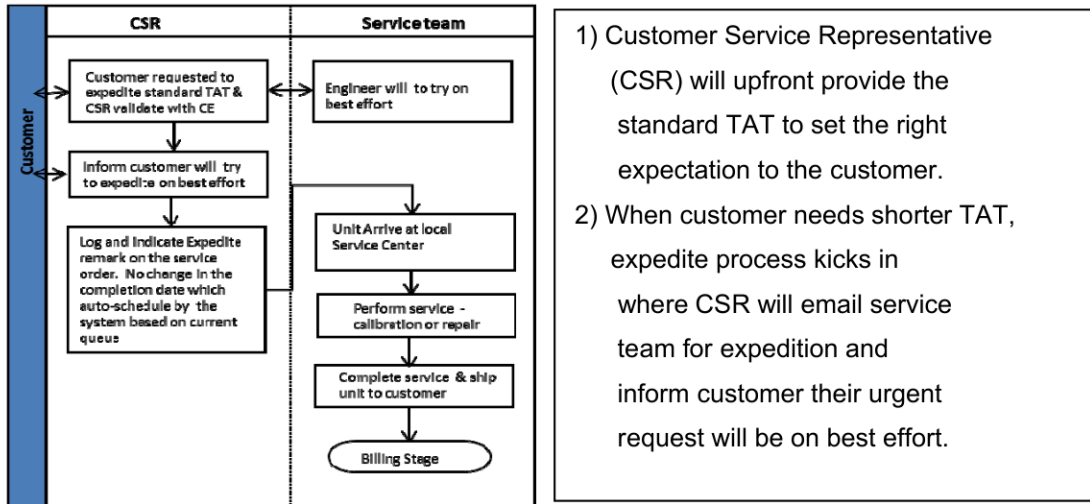


Figure 11: Current expedite process (AS-IS)

As proposed in Figure 12, the new to-be process steps not only creates TAT improvement but gives a more heart touching customer experience in terms of:

- Assurance as customer feels assured that XYZ really make efforts and goes all the way to expedite to meet his request.
- Date commitment as XYZ commits to ship on time and customer knows exactly when he will get his unit back.
- Optimize customer interaction as CSR will give a happy return call back to close the loop with the customer and delight them on the new TAT expedition experience.

Expedite Process Change

■ shows key changes.

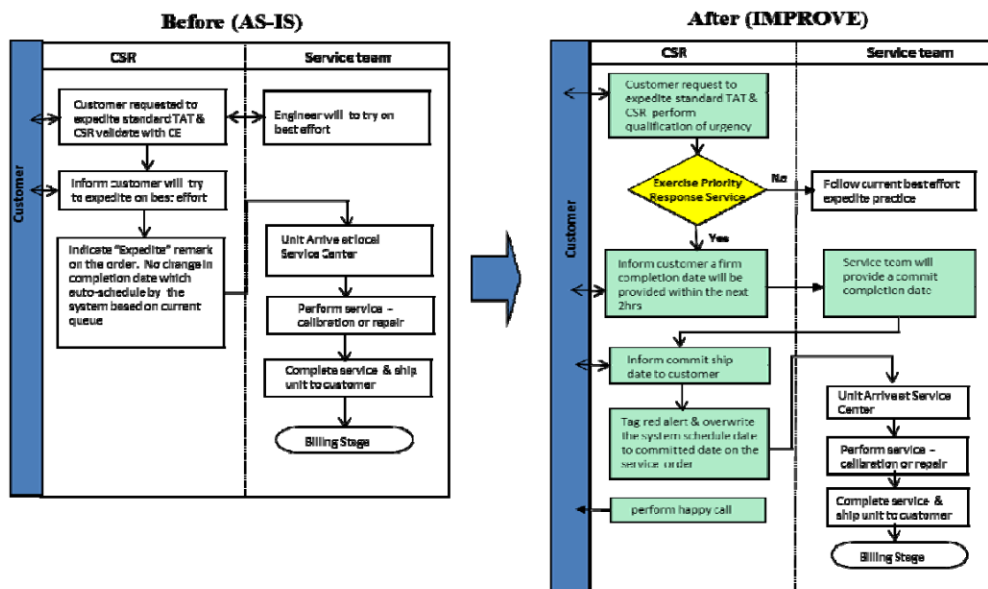


Figure 12: Expedite process change (TO-BE)

Conclusion

First of all, we have collated customer's feedbacks from surveys results into different categories. Using Pareto analysis, we have identified the main critical factors that contributed to most customer dissatisfaction are the service turn-around time (33%), service quality (28%) and communication (20%) whereby customers expect a shorter service time of their equipment with better service quality and more efficient communications.

Since service TAT has the highest impact on customer dissatisfaction, an-depth root cause analysis was performed to identify factors that could influence the service TAT which have been identified as work processes, people, availability of resources (core equipment, tools, parts) and environment issues.

Through brainstorming sessions and using affinity diagram, we have proposed 3 areas of improvement and made use of process mapping to illustrate process improvement to assist us in achieving the 3 research objectives outlined:

- Enhance the Expedite Process – create new priority response service process to manage urgent request and improve customer experience.
- Create 5S culture in the service center – to increase work efficiency by eliminating wastes and optimization resources and layout structure improvement.
- Proactive notification to the customers on service status – managing and delivering alerts, reminders and updates to the customers at all stages of the order cycles.

XYZ recognised the importance of excellent customer service and service quality will create good reputation, customer loyalty as well growth in business because customers are more likely to return to the business if XYZ able to resolve their issues, exceed their expectation and delight them with their experience on the serviced provided. Hence, with the implementation of three improvement solutions expect to increase customer satisfaction level and service performance in terms of improvement in service turn around, service efficiency and customer experience.

In order to pursue customer service excellence and stay competitive, XYZ has to be continually focus of what their customer wants thru the on-going survey results and cultivate a mind-set to think from customer's perspective.

References

- Miski, A. (2014). *Improving Customers Service at IKEA Using Six Sigma Methodology*. Available at <http://www.ijser> [Accessed 29 September 2016]
- Thomas, D. (2014). *Listen to Customers and Change the Process Accordingly – An iSixSigma Case Study by Debra Thomas*. Available at <http://sigmap.co.uk/listen-to-customers-and-change-the-process-accordingly-an-isixsigma-case-study/> [Accessed 8 August 2016]
- Trattino, R.M. (2010). *Automating Input Data to Improve On-Time Deliveries An iSixSigma Case Study by Robert M. Traettino*. Available at <http://sigmap.co.uk/sample-page/automating-input-data-to-improve-on-time-deliveries-an-isixsigma-case-study/> [Accessed 8 August 2016]