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Operation Management Performance Improvement Plan of Company H

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ABSTRACT :*In terms of process improvement, this study used mergers to remove unnecessary duplicate operations to streamline processes and find ways to regulate. Aiming at the problem that Company H has not controlled the problem of process variation, this study used process data to find out the root cause of variation, reduce product variability, and improve manufacturers' operating performance. In addition, in order to increase operating income, companies need to identify key operational qualities that affect company performance. This study has applied the Kano method and found that there are three items that can highly increase customer satisfaction and reduce customer dissatisfaction: the products and services meet customer needs; employees will give priority to customers' interests; they will understand customer needs and provide the required services. Companies can improve these items to enhance operational performance.*
KEYWORDS-*process improvement, variation, performance*

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I INTRODUCTION

Competition in all walks of life is becoming increasingly fierce. Industry needs to make their own characteristics, so that customers are satisfied with the quality of service, in order to attract more customers to purchase, and then get better income. This study established standard operating specifications for incoming quality control, statistical process quality control, and shipping quality control. At the same time, it found important process parameters for each workstation, and used merge to delete some unnecessary duplicate operations, simplify the process, and find out regulatory methods, reduce product variability, and improve operation management performance of Company H. In addition, this study divided the measurement aspects of quality into responsiveness, tangible, reliability, empathy and guarantee, and looked for items that can increase customer satisfaction and reduce customer dissatisfaction based on questionnaire data. This study used Kano's quality model analysis to understand the direction in which the quality of operations needs to be improved when a company is operating, so that the company can improve these items to enhance the performance of operation management.

II LITERATURE REVIEW

Literature review includes two parts: study of service quality and Kano two-dimensional quality model.

2.1 Service quality

Parasuraman et al. (1985) believe that service quality is the result of the consumer's expectation of the service compared with the actual service perceived. Quality has proven to be an antecedent of customer satisfaction (Brady and Robertson, 2001; Olsen, 2002). Haywood-Farmer (1998) stated that service quality includes three dimensions: (1) device, process and procedure; (2) service personnel's behavior; (3) service personnel's professional judgment. According to the scale proposed by Parasuraman et al. (1988), this study divided service quality into Responsiveness, Tangible, Reliability, Empathy, and Guarantee. Based on the scale proposed by Parasuraman et al. (1988), this study divided service quality into 5 aspects. The quality measurement items were modified for company characteristics in reference to the questionnaires of Chung et al.)2017), Chung & Chen (2015), Haywood-Farmer (1998) and Parasuraman et al. (1988).

2.2 Kano two-dimensional quality model

Kano two-dimensional quality model divides quality items into five categories (Kano et al.,1984), including Attractive Quality Element (A): One-Dimensional Quality Element (O), Must-Be Quality Element (M), Indifferent Quality Element (I), Reverse Quality Element (R). Matzler and Hinterhuber (1998) proposed the classification of Two-dimensional Quality elements of revised Kano model, as shown in Table 1. The relatively highest frequency is Two-dimensional Quality of the quality attribute. Kano questionnaire investigates

the customers' perception with and without the quality items by questionnaire survey, and the answers include the five options of "I like it", "Certainly", "I have no feeling", "I can tolerate" and "I do not like it". Matzler and Hinterhuber (1998) proposed the formula of calculating customer satisfaction coefficient as follows:

C (1): Coefficient to increase Customer Satisfaction= (A+O)/(A+O+M+I)

C (2): Coefficient to reduce Customer Dissatisfaction = (O+M)/(A+O+M+I)×(-1)

A: Attractive Quality; O: One-Dimensional Quality; M: Must-Be Quality; I: Indifferent Quality

III RESEARCH METHOD

This research subjects were the customers of Company H. 48 questionnaires were collected on December 1 to December 31, 2019. The measurement variables include: (1) Responsiveness: The content includes: employees can quickly respond to customer needs (Item1); staff are willing to assist and serve customers (Item2); staff will provide detailed job instructions. (2) Tangible: The content includes: Keep the production environment in the factory area clean (Item4); Internal facilities planning and production flow meet requirements (Item5); Products and services meet customer needs (Item6); Bright and clean facility appearance (Item7). (3) Reliability: The content includes: staff can provide reliable services (Item8); employees can fulfill their commitments to customers (Item9); employees can do things right once (Item10). (4) Empathy: The content includes: employees will take the initiative to give individual care to customers (Item11); employees will give priority to the interests of customers (Item12); employees will understand individualized customer needs (Item13); they will understand that customers need to be provided the required services (Item14). (5) Guarantee: The content includes: have enough professional knowledge to respond to customer issues (Item15); provide services that give customers peace of mind (Item16); employees can provide dutiful services (Item17); provide customers with reassuring products (Item18).

IV. RESEARCH RESULTS

In terms of process improvement, this study used merge to remove unnecessary duplicate operations, simplify the process, and find out the control methods, so that managers can understand the management methods and use them with ease. In view of the problem that the company may not master the process variation, this study used process data to find out the root cause of the variation, and adjusted the process parameters so that the average value of the process reached the target value. And charts were drawn with statistical analysis tools. Tools were used to replace personnel inspections at some sites, and process capability analysis was strengthened to reduce product variability. In addition, it is recommended that manufacturers strengthen the interactive management with outsourcing vendors to reduce the problem of insufficient goods, improve the flow of materials and personnel, increase the smoothness of logistics, and improve the performance of manufacturers' operation management. In this study, there are 5 "items of quality improvement with outcomes" that can increase customer satisfaction and reduce customer dissatisfaction (as shown in Table 2). Operators can improve these quality items for maximum benefit. In addition, a two-dimensional quality classification was made for the quality items of Company H, of which 13 items were classified as attraction quality; 5 items were classified as one-dimensional quality (as shown in Table 2). Items that can highly increase customer satisfaction and reduce customer dissatisfaction include products and services meet customer needs (Item 6); employees will give priority to the interests of customers (Item 12); will understand that customers need to be provided the required services (Item 14). The results of this analysis can help identify quality improvement priorities, which in turn can improve operation management performance.

V. CONCLUSION

This study focused on process improvement. This study used merge to remove unnecessary duplicate operations and find ways to regulate them. Aiming at the problem that the company cannot master the process variation; this study has found out the root cause of the variation according to the process data. It is suggested by this study that manufacturers need to strengthen the interactive management with outsourcing vendors to reduce the problem of insufficient number of goods, improve the flow of materials and personnel, increase the smoothness of logistics, and improve the performance of operation management. In addition, the customers of Company H in this study were the research subjects, and the Kano two-dimensional quality model was used to find out "items of service quality improvement with outcomes", and provide the industry as a strategy to improve quality. This study found that there were 3 items of "items of quality improvement with outcomes" that can increase customer satisfaction and reduce customer dissatisfaction at the same time, namely that products and services meet customer needs (Item 6); employees will give priority to customer interests (Item12); they will understand the customers need to be provided the required service (Item14). Operators must aim at these benefit quality items and continue to maintain good service quality to obtain maximum benefits.

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Table1: Categories of two-dimensional quality elements of Matzler and Hinterhuber

Negative / Positive	I like it that way	Take it for granted	It does not matter	Can be tolerated	Dislike
I like it that way	Uncertain	Attractive Quality	Attractive Quality	Attractive Quality	One-Dimensional Quality
Take it for granted	Reverse Quality	Indifferent Quality	Indifferent Quality	Indifferent Quality	Must-Be Quality
It does not matter	Reverse Quality	Indifferent Quality	Indifferent Quality	Indifferent Quality	Must-Be Quality
Can be tolerated	Reverse Quality	Indifferent Quality	Indifferent Quality	Indifferent Quality	Must-Be Quality
Dislike	Reverse Quality	Reverse Quality	Reverse Quality	Reverse Quality	Uncertain

Table2: Attributes of Kano Two-dimensional Quality and Customer Satisfaction Factors

Item	A	O	M	I	R	Q	Category	C(1)	C(2)
1	26	13	6	2	0	1	A	0.830	-0.404
2	30	12	3	3	0	0	A	*0.875	-0.313
3	15	23	4	3	2	1	O	0.844	*-0.6
4	24	15	5	3	0	1	A	0.830	-0.426
5	26	17	2	2	1	0	A	*0.915	-0.404
6	23	18	2	3	1	1	A	*0.891	*-0.435
7	15	23	3	4	1	2	0	0.844	*-0.578
8	28	15	2	2	0	1	A	*0.915	-0.362
9	27	14	3	3	1	0	A	*0.872	-0.362
10	18	22	4	2	1	1	O	0.870	*-0.565
11	30	10	3	3	1	1	A	0.870	-0.283
12	18	24	3	1	1	1	O	*0.913	*-0.587
13	29	9	4	3	2	1	A	0.844	-0.289
14	23	18	5	0	1	1	A	*0.891	*-0.5
15	17	22	3	3	2	1	O	0.867	*-0.556
16	26	16	2	3	1	0	A	*0.894	-0.383
17	25	15	4	3	0	1	A	0.851	-0.404
18	26	14	3	3	2	0	A	0.870	-0.370
Total average								**0.871**	**-0.434**

Note:A: Attractive Quality; O: One-Dimensional Quality; M: Must-Be Quality; I:Indifferent Quality;
R: Reverse Quality; Q: uncertain; C (1): Coefficient to increase customer satisfaction;
C (2): Coefficient to reduce customer dissatisfaction.
* denotes the absolute value of coefficient>absolute value of mean of overall coefficient

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