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Controlling Supplier Supply Stability with High Demand During the Covid-19 Pandemic at PT PQS

COVID-19 with a snap into a very influential factor in all sectors of the economy worldwide. The decrease in demand is also strongly felt in the manufacturing sector in Indonesia, even there are some factories were forced to have to lay off thousands of employees because it is not able to pay the salaries of employees. The opposite condition was experienced by PT PQS Indonesia, which experienced an increase in demand by 40% compared to the average demand for 6 months before COVID-19, because some of the company's branches in other countries had stopped production because they had to follow local government policies. Eventually all orders were sent to be produced at PT PQS Indonesia. The increase in demand does not mean that PT PQS Indonesia did not experience obstacles during the COVID-19 pandemic, the problem faced was the decline in delivery performance from suppliers, which impacted on the reduced stock of raw material stock and could even lead to production stops. This is because the suppliers were affected by Covid-19. This is a challenge because PT PQS has dozens of suppliers at home and abroad. To repeat this so that production does not stop, PT PQS Indonesia added a feature to help control supplier delivery performance. In 2018 the average delivery performance is only 60% — 70%, and the management target is 90% for local suppliers and 85% for overseas. This "Supplier Delivery Performance" feature really helps the procurement team to control the arrival of goods and provide information to suppliers related to their delivery performance, as well as being one of the index KPIs to evaluate supplier performance for one year before the Annual Vendor Meeting is held. To create a "Supplier Delivery Performance" index, PT PQS must also create SOPs or standardize them so that all relevant suppliers and procurement teams can easily understand them.

Keywords : COVID-19 , Supplier Delivery Performance and Standarization

1. INTRODUCTION

Covid-19 gave a lesson to the PT PQS Indonesia procurement team, that suppliers on the performance of on-time delivery is one of the important items that must be controlled to get objective supplier assistance. If you see data in 2019 (Figure 1) submitted only during the year the ratio at the time of delivery from the supplier is received is very satisfying, there is only one supplier that can coordinate well, so that delivery can be approved according to schedule. There was a very significant decrease in shipments from suppliers at Pandemic Covid-19 while the demand received was increasing considering that several branches in other countries had stopped production. PT PQS must discuss how to be able to carry out strict control and monitoring of the complementary goods and arrivals from suppliers.

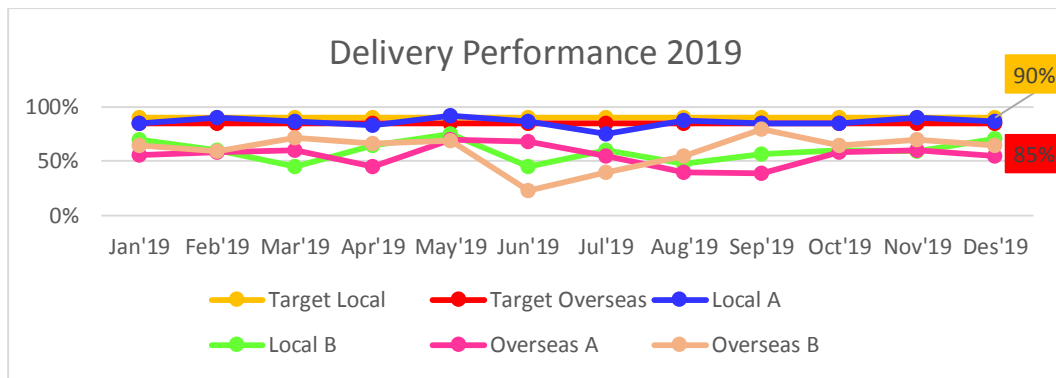


Figure 1: Supplier delivery performance year 2019 .

Covid-19 as one of the events whose existence is in the external environment is relatively uncontrolled or beyond the control of the company. Based on secondary data obtained during the study period, it can be seen that COVID-19 affects the internal environment of the business entity. COVID-19 has an impact on the conventional patterns of business activity in the fields of marketing, finance, human resources and operations. Baldwin and Mauro [3] found a tendency that the pandemic Covid-19 In the early occurrence of lock down the city of Wuhan with a variety of events reported, have a negative impact on news and business interactions for the citizens and the city's network Wuhan Hubei Province, and also when virus extends throughout the whole of mainland China.

Baldwin and Mauro [4] also stated that in the subsequent development of Covid-19, it not only had a negative effect on the regions and countries that were struck by Covid-19, but also had a further impact on other countries because it was related to economic value chains. When the virus extends out of mainland China, the effect is also increasingly widespread. Especially when the affected countries continue to increase, especially countries that have economic power such as China, USA, Germany, Italy, Japan and South Korea. The On Time Delivery channel is part of the supply chain, therefore the concept needs to be elaborated. Supply chains consist of related processes that influence information and physical flow from suppliers to end customers. These processes must be managed in complex corporate networks and the challenge is to integrate and synchronize this flow to ensure fast and cost-effective delivery. Competition is no longer played between individual companies, but between value chains and how these chains are coordinated. It is not only forward flow that is considered in the supply chain [26]. The increasingly important part of the supply chain is material backflow because of its sustainable and economic aspects. The aim is to restore economic and ecological value as much as possible and reduce waste [19]. One of issues which happened in health laboratory companies particularly in referral sample services is inefficient times when doing the existing work which causing longer of waiting times [29]. Logistics is management of flow of goods movement start from original point and ends at point of consumption to meet certain demands [7, 11]. Reverse logistics is the flow of goods back in the supply chain for various reasons, such as repairs, maintenance, or the return of the final life cycle. Reverse logistics is something that must be considered already in the design stage so that the product is easy to disassemble and recycle [1]

Shipping performance can be defined as delivery accuracy, reliability of delivery or on-time delivery. Timely delivery, also referred to as delivery, is one of the most common Order-to-Delivery performance measurements. The information system for approaching time is also one of the government's efforts to improve national logistics efficiency by fulfilled one of the Logistics Performance Index (LPI) indicators, namely Tracking & Tracing and Timeliness [15] This determines whether perfect delivery has been achieved or not. Measurement is a driver for customer satisfaction and supply chain excellence [6]. Shipping performance is very dependent on the quality of information from consumers to suppliers. If the communication goes well the delivery performance can go well. Vice versa, if communication between consumers and suppliers is not going well, delivery performance is also not good.

Standardization is a way in which businesses can reduce their costs (whether financial or time) [24, 28]. This is the way the organization aims to ensure a clear, visualized and safe work environment [13]. With the application of appropriate standards to prevent defects in production and at the same time is a procedure to

prevent other errors that can have an impact on production. Therefore it is desirable to standardize all processes carried out in the manufacturing sector. Standards determine best practices for job implementation. The improvement of product quality and added value is expected to be known to the different conditions [18, 25, 21, 22]. The aim is to do the job right the first time without mistakes, without negative effects on humans and the environment. The aim of this research is Measuring supplier performance by creating a delivery performance index to reduce the potential impact of a production stop during Covid-19 and Conducting information dissemination, literacy & education to suppliers regarding supplier delivery performance index made by PT PQS . KPIs are defined as strategic and measurable measurements that reflect critical business success factors [14].

2. MATERIALS AND METHODS

The method used is a quantitative and qualitative data approach in analyzing the PT PQS value chain. The data used consists of supplier and delivery performance data as well as customer demand data that aims to determine PT PQS delivery performance in the midst of a pandemic with various strategies that have been carried out. Development includes business process mapping activities using levels, and business process mapping [2, 17, 19, 24, 25, 22, 27]. The focus of this research is to find the added value of the business processes carried out by PT OPZ so that the stability of its business processes is maintained in any condition. The analysis used is to conduct a comparative analysis of supplier delivery performance in 2019 and 2020 which is supported by the number of customer requests affected by the company's current business conditions.

3. RESULTS

In pandemic conditions that are uncertain, PT PQS makes a forecast that aims to anticipate the lack of stock so that PT PQS begins to prepare stock of goods from suppliers. One of the ways that PT. PQS in the face of high consumer demand, namely by providing suppliers forecasts of raw material needs from January to June 2020. This forecast is provided by PT. PQS to suppliers to anticipate lockdowns in other countries, so that overseas goods have been imported since January. This also applies to local companies, since January has been given a standard forecast but PT. PQS has given an illustration of the possible impact of COVID-19 on their suppliers, so they also gave warnings to their suppliers to prepare to face COVID-19, but in March 2020, when Covid-19 began to appear in Indonesia, the forecast was raised, this was led by high requests received by PT. PQS. When production demand at PT. High PQS, the condition of companies engaged in similar fields with PT. PQS has the opposite effect, namely a decrease in demand due to the Covid-19 outbreak. This makes PT. PQS to ask suppliers to prioritize the supply of raw materials greater than their previous capacity.

Table 1: Forecast During Covid-19 (2020)

FORECAST 2020							
Type	Dec	Jan	Feb	Mar	Apr	May	Jun
E2B	41,800	42,636	44,341	46,115	48,421	50,842	50,842
E3FA	11,590	11,822	12,295	12,786	13,426	14,097	14,097
E3JK	8,930	9,109	9,473	9,852	10,344	10,862	10,862
H3CR	72,200	70,756	72,171	75,001	78,751	82,689	82,689
H3DK	9,880	10,078	10,481	10,900	11,445	12,017	12,017
H3DS	13,110	13,372	13,907	14,463	15,187	15,946	15,946
H3Y	51,840	52,877	54,992	56,049	58,852	61,794	61,794
H57CX	13,110	13,372	13,907	14,463	15,187	15,946	15,946
H7E	16,720	17,054	17,737	18,446	19,368	20,337	20,337
E3Z	64,410	65,698	68,326	71,059	74,612	78,343	78,343
E5CC	21,470	21,899	22,775	23,686	24,871	25,119	25,368
Total	325,060	328,673	340,405	352,822	370,464	387,992	388,241

PANDEMI COVID-

Almost all industrial sectors have experienced a significant decline in demand, some even lay off employees because there is no activity that can be done and some are urged not to operate to reduce human

mobility to break the chain of distribution of Covid-19. But this is not the case with PT PQS, based on the data above (Figure 2 & 3) starting from January to April customer demand is increasing. Seen from an increase in demand per area and demand based on the type of product.

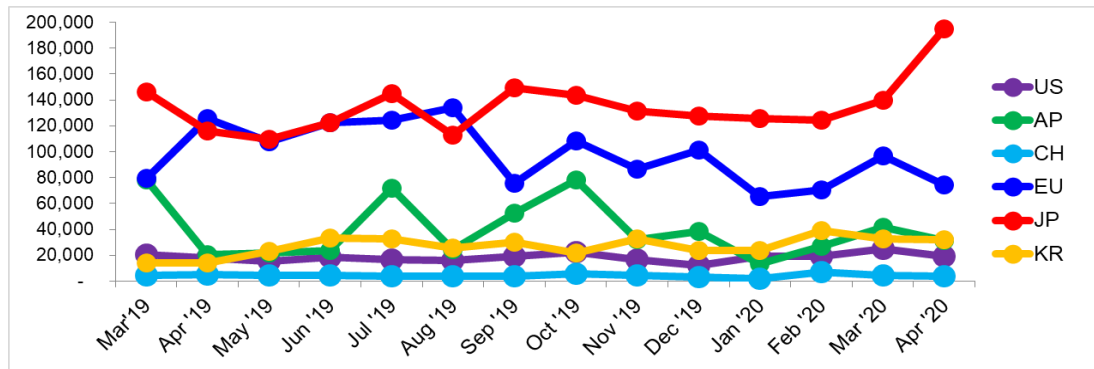


Figure 2. Customer demand by area
Source: PT PQS Indonesia

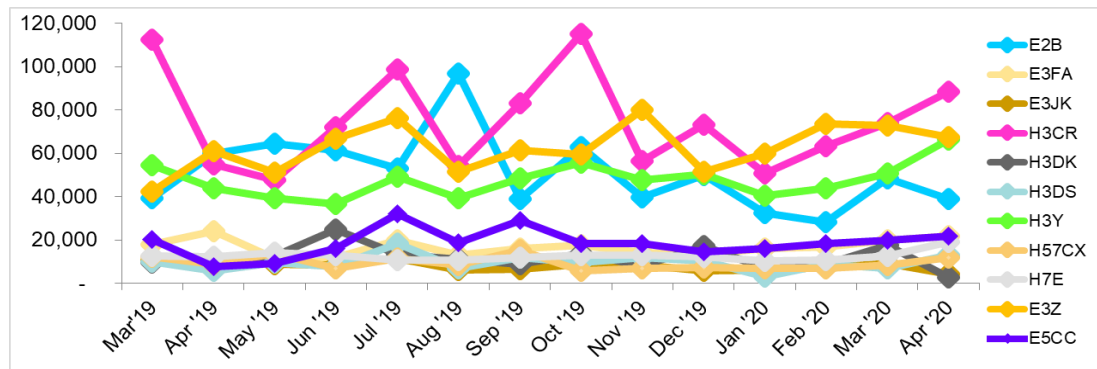


Figure 3. Customer requests by type
Source: PT P QS Indonesia

In the midst of a pandemic that has plagued almost all over the world, almost all industrial sectors have experienced a significant decline in demand, some have even laid off employees because there is no activity that can be done and some are urged not to operate to reduce human mobility to break off Covid-19 deployment chain. But this is not the case with PT PQS, based on the data above (Figure 2 & 3) starting from January – April '20 customer demand has increased. It can be seen from the increase in demand per area and demand based on the type of product. This is caused by some PT PQS branches in other countries that have to stop operating because they have to lock down to follow the government's policy around, for example branch companies that must stop operating (PT PQS China, Japan, Malaysia, Singapore, Thailand, etc.) therefore several requests are allocated to PT PQS Indonesia, which still has permission to continue operating, of course, with the Covid-19 protocol that must be fulfilled.

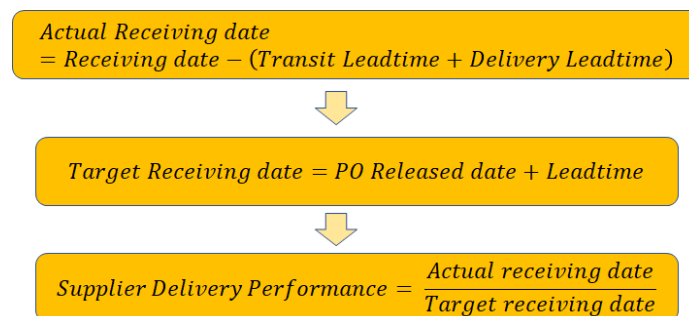
According to Pujawan [16] supplier performance needs to be monitored continuously. Performance evaluation / monitoring is important to be done as an evaluation material to improve supplier performance or as a material consideration of whether or not to find alternative suppliers. PT PQS has 2 supplier divisions, namely Local Supplier (70%) and Overseas Supplier (30%). To maintain good product quality, PT PQS still entrusts some of its core materials to outside suppliers (30%) which are of no doubt quality even though the price is a little more expensive while for supporting materials in collaboration with local suppliers (70%). In monitoring supplier performance, PT PQS made improvements by making SOPs to standardize supplier performance control and adding score delivery performance features as follows:

WGS - WORK GUIDANCE SHEET					
SECTION	TYPE	PROCESS NAME	Certified person	PROCESS NO	
PROC	ALL TYPE	KPI PDCA-Supplier Delivery Performance Based on STD LT	NO	KPI PDCA	
	INITIAL CHECK		WAKTU PENGECEKAN	TOOLS / REMARK	
PREPARATION	1. Report SQL--> Supplier Delivery Performance		N/A	Visual	
			N/A	Visual	
W o r k F l o w	<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>Decide- update</p> <p>↓</p> <p>Actual result management</p> <p>↓</p> <p>Actual Difference</p> <p>↓</p> <p>Cause Investigation</p> <p>↓</p> <div style="display: flex; justify-content: space-around;"> <p>Quality</p> <p>Capacity Issue</p> <p>Limited Shipment</p> <p>Material Shortage</p> <p>Registration/Approval /Documentation Issue</p> </div> </div> <div style="width: 65%;"> <p><standard value> Decider : Division Manager Deciding Method : History record way : Manual by report</p> <p><update> update time : Monthly recorde way of time : Manual PIC of update : SPV</p> <p>Management indicator confirming place : Supplier Delivery performance PIC : Report Confirming time : SPV Problem Recorder : Monthly</p> <p>confirming method : Report to supplier Report object : Supplier</p> <p>Normal Progress Report Report Object : Supplier Report Content : Supplier Delivery performance Actual vs Target Report : Monthly</p> <p>Abnormal (bigger/smaller)</p> <p>Management Indicator Investigation Executants : Supplier Delivery Performance report time : Each Proc - if abnormality continue in 2 consecutive months, report to Manager - if abnormality continue > 2 months, report to Division Manager cause confirmation PIC : SPV</p> <p>Countermeasure applicant : each Proc member Countermeasure executants : each Proc member (by each product type owner) Countermeasure confirmation PIC : Each Proc member Report Object : Supplier Countermeasure recorder : Each Proc Result confirm frequency : Every month depend on abnormality occurs</p> </div> </div>				
	INSPECTION ITEM :				
DATE	MODIFICATION OR CHANGE	ISS'D	CHK'D	QA CHCKD	APPD
March, 2020	New Issued	Sarah	Sarah		DJOKO

Figure 4. Supplier Performance Standardization

Source: PT PQS Indonesia

From the SOP above, it is determined what items will be the parameters of supplier delivery performance control which are then added to the calculation to measure supplier delivery performance as in the flow calculation below:

**Figure 5.** Flow Calculation of Supplier Delivery Performance

Source: PT PQS Indonesia

In this formula, the Actual Receiving Date is the actual arrival of raw materials from suppliers with the formula: Receiving Date — (Transit Lead Time + Delivery Lead time) while the Target Receiving Date is obtained from the PO Release Date + the raw material purchase lead time. After the standardization of supplier delivery performance has been determined, it is then applied to the system at PT PQS with the addition of the score delivery performance feature that enables PT PQS to control and monitor supplier performance:

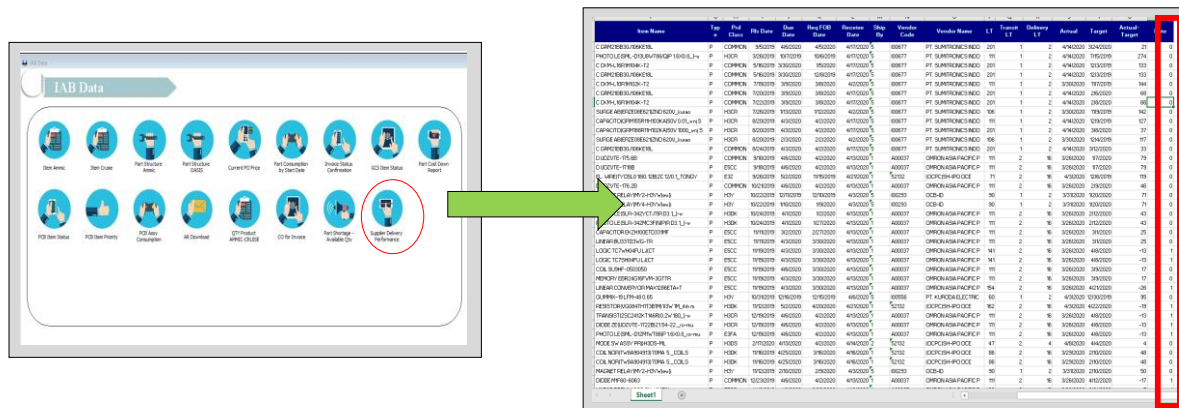


Figure 6. Flow Calculation of Supplier Delivery Performance
Source: PT PQS Indonesia

With these features, it can be seen the delivery performance of each PT PQS soup plier so that if there is a performance from suppliers of PT PQS that is not good, it makes it easy for PT PQS to evaluate the performance of suppliers to be further improved so that the distribution of raw materials to PT PQS is timely according to schedule deliver y. This feature is also an added value for PT PQS in improving the performance of suppliers as shown in the following graph:

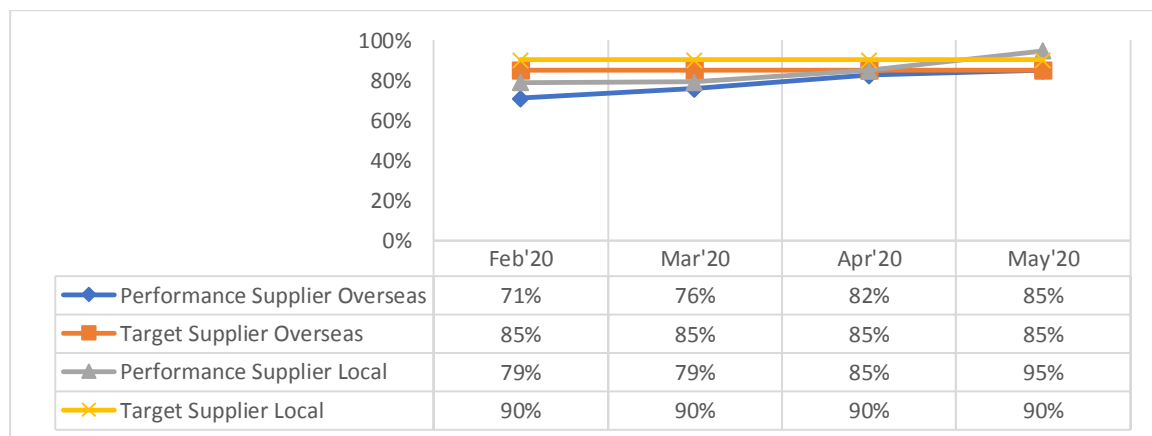


Figure 7. Supplier performance 2020

Based on the graph above shows that supplier performance increased from overseas supplier targets by 85% with actual 85% while local supplier targets by 90% with actual 95% in May 2020. Significant improvement of supplier performance is not only influenced by the features control that is implemented by PT PQS but on the other hand is influenced by the current business conditions experienced by the company. Conditions where the company's space is limited that makes the company must think of strategies for business processes to continue

4. CONCLUSIONS

1. To be able to minimize the occurrence of production stops due to blocked material arrivals due to the Covid-19 pandemic and to be able to meet customer demand which increased by around 40%. So they make a *Supplier Delivery Performance Index* by using a simple formula by comparing *actual Receiving date* with *the target receiving date* to facilitate the team procurement control the arrival of raw materials from suppliers and are presented with an additional feature added to the existing system, and PT PQS also true-can correctly measure objectively the performance of its suppliers and of course the supplier itself can see its own performance so that improvements can be made as soon as possible.
2. After making a formulation of how the delivery performance assessment system is, and the SOP has been agreed upon by the leaders of PT PQS, socialization & literacy was conducted to all suppliers related to it. So that they can assess and embarrass their self-control of their work performance in an easy way, which is to see the performance index listed in the system.

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