The Effectiveness of Using Logistics Information Systems and Integrity on Delivery Quality in Customer Service Level Assessment

(Case Study: PT. Agility International)

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Abstract:- Logistics Information System was created in order to support company activities as an information tool between internal parties and customers. Consistency in the use of logistics information systems, commonly referred to as integrity, is crucial for the implementation of direct reports to customers through it. The information movement is expected to be carried out in a timely and accurate manner to fulfill the customer Service Level Agreement reports. This study aims at determining the effectiveness of the use of Logistics Information Systems and Integrity on the Quality of Delivery in Service Level Assessment by Customers. The research method uses a quantitative method approach.

Keywords:- Effectiveness of Logistics Information Systems, Delivery Quality, Integrity, Service Level Assessment.

I. INTRODUCTION

In this era of globalization, the use of information systems in Logistics or Freight Forwarding companies aims as data processors whose main task is to provide accurate information to customers. Integrity is one of the main components in a company that has an important role in providing the maximum possible service to customers. In the implementation, optimal integrity and responsiveness in the attitude of employees to meet customer needs will result in quality delivery. Freight Forwarding company is a service provider, so that integration between departments that can create quality delivery is very necessary. For this reason, the inter-departmental integrity that can create quality shipments is needed. If the quality of delivery has problems, of course this will have an impact both on customer assessment of the company and the company itself because the service level assessment related to the company's performance is considered poor and results in customers switching to other companies.

PT. Agility International, a world-class Freight Forwarding company with international standards that is very concerned about efficiency, has several Logistics Information Systems to maintain and support various operational activities in the company. The number of information systems owned by the company is expected to reduce manual operations in shipping. But the efforts made by PT. Agility International has not had the desired results. There are still many reports or reports on the delivery of goods to customers, which are done manually by inputting data directly.

One of the platforms owned by the company to facilitate shipment reports or goods handling reports is called Agility Connects. The company will provide access to customers or customers with the Tracking feature, where customers can track the status of ongoing shipments or view the history of previous shipments. This access is granted to active subscribers. In addition, this platform also stores important documents in each shipment, which can help customers or customers to find out the document history of active or completed shipments. If needed, the customer can retrieve the document through the platform provided, which is in softcopy. However, active customers who have used Agility Connects since 2019 are only 205 customers or 9.43% compared to customers in 2019, which are 2,175 customers.

Information that flows to customers is also sourced from external companies, namely vendors that the company uses. Thus, the internal company must package both sources of information properly. Consistency and firmness in the use of logistics information systems commonly referred to as integrity are needed for the implementation of direct reports to customers through logistics information systems. Integrity here means the consistency generated by customer service PT. Agility International where customer service is the company's frontline in the eyes of customers. Characteristics of customer service at PT. Agility International is a dedicated service that really knows what each customer needs from

upstream to downstream handled by the individual customer service. The very minimal percentage of use of logistics information systems is a reflection of the inconsistent consistency of the company's customer service and affects the quality of effective and efficient delivery.

The movement of information is expected to provide timely and accurate information because it is very important for direct reports on customer delivery of goods and the long-term impact on the fulfillment of Service Level Agreement reports to customers.

II. RESEARCH PROBLEM

This study tries to answer the following questions:

- 1. Is there a direct influence on the effectiveness of the use of information systems on delivery quality at PT. Agility International?
- 2. Is there a direct influence of integrity on delivery quality at PT. Agility International?
- 3. Is there a direct influence of the effectiveness of the use of information systems on the service level assessment at PT. Agility International?
- 4. Is there a direct influence of integrity on the service level assessment at PT. Agility International?
- 5. Is there a direct influence of delivery quality on service level assessment at PT. Agility International?
- 6. Is there an indirect influence of the effectiveness of the use of information systems on service level assessment through delivery quality at PT. Agility International?
- 7. Is there an indirect influence of integrity on service level assessment through delivery quality at PT. Agility International?

III. LITERATURE REVIEW

Effectiveness of the use of information systems

According to the Big Indonesian Dictionary, having an effect, being effective, bringing results, being practical is the definition of the word effectiveness. Meanwhile, effectiveness means that the situation is influential, effective, successful, and valid (Priyandono, 2017). Expected results with actual results have a relationship in effectiveness, whether achieved or not. Effectiveness has the meaning of "effectiveness" (effectiveness) has the effect/effect of success. In other words, effectiveness shows how far the achievement of the results that have been set as the intended goal is (Faizah et al., 2020).

Information systems, in general, can be defined as systems that can collect, process, store, analyze and disseminate information for specific purposes (Sitorus et al., 2016). In particular, according to (Hidayat, 2016) data management of logistics information can facilitate activities if the Logistics Management Information System can run. The function of providing accurate logistics data can be used for various purposes, such as planning for goods requirements, analyzing demand for goods, and distributing goods. According to (Imaniyati, 2010), a logistics information system is a communication network within an organization or company to create or send, or receive information submitted

by the organization or company to inter-departmental or also to customers.

Input, Process, and Output are three information system activities that function as support for a company's decision, control, analysis of problems that may arise, and create new products or other services.

From some of these definitions, it can be synthesized that the ease of technology that is perceived by the user appropriately, which is intended as a data processor, is the function referred to as the effectiveness of the use of information system technology, starting from input, process, and output. Indicators used in this study are:

- 1. Flexibility to use
- 2. Flexibility to change
- 3. Business support tools
- 4. Features
- 5. Customer Needs
- 6. Communication tools

Integrity

Integrity is a behavior that is intact, consistent, committed in the same words as his actions, has the ability and value system the same as it adheres to, which is shown in his daily life attitude wherever he is and with anyone, especially in his duties and functions of work (Zahra, 2011). Another definition says that integrity requires individuals to adhere to the technical and ethical standards of the organization. Integrity is part of the character and skills that play an active role in us, which can be seen from individual decisions and actions (Purwati & Wijaya, 2019). According to (Zulifah, 2017) self-awareness as a human being, the demands of needs and souls, and the spirit of mutual cooperation are the driving factors for integrity. Integrity can also be interpreted as a technique for assessing one's abilities. What distinguishes integrity from others is that the ability to improve oneself comes from within, not from outside, so a deeper understanding of ourselves is needed.

According to (Harmaily, 2019) employees who have integrity are a valuable asset for the organization because the tendency of the work results to be produced will be positive or it can also be called far from the tendency of deviation, that is what is needed by companies that are expected from workers. The success of an organization to realize employee performance is to consistently and appropriately establish work communication by establishing the integrity of each employee (Rachman Putra et al., 2013).

From some of these definitions, it can be assumed that by having high integrity, individuals will be strong against temptations that will worsen their integrity. Individuals who have high integrity will be consistent with their commitments and are responsible for good work standards or towards the goal of the company or organization. Indicators of integrity used in this study are:

- 1. Skills
- 2. Act
- 3. An active role
- 4. Attitude to the company values

5. Confidance

Delivery Quality

According to (Hati & Juliati, 2019), the target that is felt by customers for the services provided is quality logistics services. The target that produces quality is not determined only by the company. Quality of service, in this case, is the quality of delivery provided by the company, which significantly influences customer satisfaction because it gives an impetus to customers to undergo a strong bond with the company (David, 2020).

In addition, according to (Yulianto, 2018), the quality of service, especially delivery, will provide an impetus for customers to establish mutually beneficial emotional bonds with the company in the long term. The perception of mutual benefit is the fruit of achieving the expectations desired by customers in a reasonable and quality manner for the delivery of goods.

There are three types of customer expectations: 1) Will expectation is the level of performance predicted or estimated by consumers when assessing the quality of the service. 2) Should expectation is the level of performance that is considered appropriate for consumers to accept. 3) Ideal expectation is the optimum or best level of performance expected to be accepted by consumers (Hafizha et al., 2019). Customers will consider a delivery service quality performance to be good and of high value, if the services they get in the field are in accordance with customer expectations. And conversely, customers will consider a delivery service quality performance to be not good and of low value, if the services they get in the field are not in accordance with customer expectations. Indicators of delivery quality in the study are:

- 1. Good planning
- 2. On Time
- 3. Quantity of goods
- 4. Quality of goods
- 5. System Availability
- 6. Information Accuracy
- 7. Service Provision
- 8. Fast Service
- 9. Risk Management
- 10. Management Analysis

Service level assesment

According to (Haris & Pramudita, 2018), Service Level or Key Performance Indicator is a benchmark for operational and non-operational in improving employee performance towards customers. Improving service quality is an activity to improve customer service level assessment of the services we provide. This group of activities is carried out by the company to always maintain business competition and obtain customer satisfaction in accordance with expectations.

Service Level Agreement is a formal negotiation agreement between two parties that defines the services to be provided by the provider to the customer, including metrics to measure service and service quality, and tolerances allowed for the service to operate, obligations of provider and

customer, actions to be taken in certain scenarios (Ramadhany et al., 2019)

According to (Waspada, 2012) an effective Service Level Agreement activity must be interrelated in a management process. The process is identified through a clear sequence of activities, and a description of the responsibility for each step or activity carried out. Starting from the process, responsibilities and inputs, and outputs.

Service Level has the function of resolving a complaint or service request. Of course, assurance of service quality is needed in accordance with the level of service that has been agreed with customers that must be fulfilled by the company (Sdgd et al., 2016). Another understanding obtained regarding Service Level is the achievement of a benchmark against indicators that are applied to measure the level of service provided (Haris & Pramudita, 2018).

The application of the service level desired by the customer to the company is the points that become the customer's measurement tool for the performance of the service company in the form of an assessment. Therefore, the service level assessment must be in line with customer goals so that the work produced can be effective and efficient, and of good value. Indicators of service level assessment used in this study are:

- 1. Documentation
- 2. Response time
- 3. Escalation mapping
- 4. Performance quality results
- 5. Key Performance Indicators (KPI)
- 6. Performance evaluation

IV. RESEARCH METHOD

This research uses the quantitative method. The quantitative approach is a research procedure that produces data in numbers and is generally analyzed using descriptive or inferential statistics (Silaen, 2018). The numbers obtained are processed and sought to determine their effect on the formulation of the research problem that has been determined. Do the survey results prove the proposed hypothesis? Do the numbers show that we are right about the problem under study? Etc.

The target population in this study were employees of PT. Agility International in 7 Branches in Indonesia. The author determines that the population is the Customer Service Team that handles Customer Handling, namely 34 people in the period October 2020 to April 2021. From the total population of 34 employees, all of them were taken as research samples.

V. RESULT

Validity Test

The value of the critical limit of validity is 0.3388. If the correlation value or r count is less than or less than 0.3388, the questionnaire item is invalid. On the other hand, if the calculated r-value is greater than 0.3388, then the items on the questionnaire are declared valid. Test the validity of the research instrument (questionnaire) for each of the variables studied can be seen in Table 1 below.

Table 1. Validty Test Result

Table 1. Validty Test Result					
Variable	Statement	Result	Status		
Effectiveness of the use of information systems	1	0.765	Valid		
miorination systems	2	0.673	Valid		
	3	0.855	Valid		
	4	0.630	Valid		
	5	0.827	Valid		
	6	0.877	Valid		
Integrity	1	0.727	Valid		
	2	0.636	Valid		
	3	0.858	Valid		
	4	0.864	Valid		
	5	0.882	Valid		
Delivery Quality	1	0.829	Valid		
	2	0.857	Valid		
	3	0.725	Valid		
	4	0.723	Valid		
	5	0.866	Valid		
	6	0.885	Valid		
	7	0.845	Valid		
	8	0.729	Valid		
	9	0.733	Valid		
	10	0.629	Valid		
Service Level Assesment	1	0.862	Valid		
	2	0.899	Valid		
	3	0.880	Valid		
	4	0.847	Valid		
	5	0.869	Valid		
	6	0.793	Valid		
	7	0.813	Valid		

Source: Primary data, processed by Statistical Package for the Social Sciences version 25

Table 1 shows that each item of each variable statement of Effectiveness of the use of information systems, Integrity, Delivery Quality, and Service Level Assessment are declared valid.

Reliability Test

Table 2. Reliabity Test Result

Variable	Alpha Value	Limit Value	Status
Effectiveness of the use of information systems	0.856	0.7	Reliable
Integrity	0.852	0.7	Reliable
Delivery Quality	0.935	0.7	Reliable
Service Level Assesment	0.936	0.7	Reliable

Source: Primary data, processed by Statistical Package for the Social Sciences version 25

Table 2 shows that the overall alpha value is reliable (reliable) because the Cronbach Alpha coefficient is 0.70, or it can be said to be greater than 0.70. In accordance with the results of the validity and reliability analysis mentioned above, the statement items prepared from each variable can be used and distributed to all 34 employees who have been targeted as respondents. Therefore, it can be seen that the items show valid and reliable results. From these results, further analysis can be carried out.

Partial Test

Table 3. Partial Test Structure 1

	Model	Standardized Coefficients Beta	t	sig
1	(Constant)		0.922	0.364
	Effectiveness of the use of information systems	0.538	3.811	0.001
	Integrity	0.351	2.481	0.019

 a. Dependent Variable: Delivery Quality
 Source: primary data, processed by Statistical Package for the Social Sciences version 25

- 1) Effectiveness of the use of information systems has a direct effect on the Delivery Quality. Table 3 shows the results of the t-test. The Sig value is 0.005 < 0.01, so the path analysis coefficient is significant. Thus, Effectiveness of the use of information systems has a positive and significant impact on the Delivery Quality. The direct influence of the effectiveness of the use of Logistics Information Systems on the Quality of Delivery is indicated by the Beta value of 0.538.
- 2) Integrity has a direct effect on delivery quality. Table 3 shows that the t-test obtained a Sig value of 0.019, which is smaller than 0.05 or [0.019 < 0.05], then the path analysis coefficient is significant. Thus, Integrity has a positive and significant effect on Delivery Quality. The large influence of Integrity on the Delivery Quality is indicated by the Beta value of 0.351.

Table 4. Partial Test Structure 2

Model		Model Standardized Coefficients Beta		sig
1	(Constant)		-	0.304
			2.045	
	Effectiveness of the use of information systems	0.267	1.905	0.066
	Integrity	0.386	3.086	0.05
	Delivery Quality	0.328	0.328	0.033

a. Dependent Variable: Service level assessmentSource: primary data, processed by Statistical Package for the Social Sciences version 25

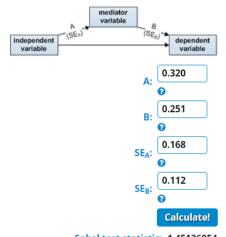
- 1) From table 4 shows that the t-test obtained a Sig value of 0.066 <0.05, so the path analysis coefficient is significant. Thus, using the Effectiveness of the use of information systems has a positive and significant impact on the Service Level Assessment. The direct influence of Effectiveness of the use of information systems on Service Level Assessment is indicated by the Beta value of 0.267.
- 2) Integrity has a direct effect on Service Level Assessment. Table 5 shows the t-test obtained Sig 0.005 <0.05, then the path analysis coefficient is significant. Thus, Integrity has a positive and significant effect on Service Level Assessment. The considerable influence of Integrity on Service Level Assessment is indicated by the Beta value of 0.386.</p>
- 3) Delivery Quality has a direct effect on Service Level Assessment. Table 5 shows the t-test. The Sig value of 0.033 is smaller than 0.05 or [0.033 <0.05], so the path analysis coefficient is significant. Thus, the Delivery Quality has a positive and significant effect on the Service Level Assessment. The considerable influence of Delivery Quality on Service Level Assessment is indicated by a Beta value of 0.328.

Sobel Test

The Sobel test was conducted to test whether the relationship through a mediating variable could function as a significant mediator in the relationship. The calculation of the z value of the Sobel test can use the danielsoper online link via www.danielsoper.com with the Statistical Calculator \rightarrow MediationModels \rightarrow Sobel Test Calculator for Significance of Mediation feature, with the following results:

 Mediation Test of Effectiveness of the use of information systems on Service Level Assessment through Delivery Quality.

I. Ease of Use



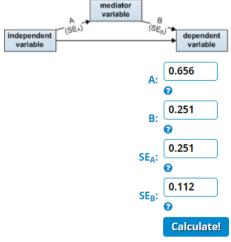
Sobel test statistic: 1.45136054 One-tailed probability: 0.07333975 Two-tailed probability: 0.14667949

Figure 1 Sobel test model 1

Based on Figure 1 the one-talled probability result is 0.073 <0.05, so it can be concluded that the Delivery Quality variable cannot function as a mediator or is unable to mediate the indirect effect of the Effectiveness of the use of information systems on Service Level Assessment.

2) If Mediation Integrity Effect on Service Level Assessment through Delivery

Based on Figure 2, the one-talled probability result is 0.044 < 0.05, so it can be concluded that the Delivery Quality variable can function as a mediator or be able to mediate the indirect effect of Integrity on Service Level Assessment through Delivery Quality.



Sobel test statistic: 1.70126221 One-tailed probability: 0.04444688 Two-tailed probability: 0.08889376

Figure 2. Sobel test model 2

Goodness of Fittest Test

Table 6. R Square Sub Structure 1

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	0.819a	0.671	0.650	3.16769

a. Predictors: (Constant), Integrity, Effectiveness of the use of information systems

Source: primary data, processed by Statistical Package for the Social Sciences version 25

Table 7. R Square Sub Structure 2

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	0.819 ^a	0.671	0.650	3.16769

a. Predictors: (Constant), Delivery Quality, Integrity,
Effectiveness of the use of information systems
Source: primary data, processed by Statistical Package for the
Social Sciences version 25

Then the total diversity of data that can explain by the model is measured by:

$$R_{m}^{2} = 1 - (1 - R_{1}^{2}) \cdot (1 - R_{2}^{2}) \cdot (1 - R_{p}^{2})$$
 (1)

$$R_{m}^{2} = 1 - (1 - R_{1}^{2}) \cdot (1 - R_{2}^{2}) \cdot (1 - R_{p}^{2}) R_{m}^{2}$$
 (2)

$$= 1 - (0,650) \times (0,766)$$

$$R_{m}^{2} = 0,5021$$
(3)

The R^2m value of 0.5021 means that the diversity of data explained by the model is 50.21 percent, while the remaining 49.79 percent is explained by other variables outside the model. Thus the research model has a high predictive ability on the behavior of the dependent variable, which is characterized by a high coefficient of determination above 50 percent.

VI. DISCUSSION

Effectiveness of the use of information systems has a direct effect on the Delivery Quality. The results of the analysis of this test obtained that the path coefficient of Effectiveness of the use of information systems has a direct effect on Delivery Quality variable is 0.538 or 53.8 percent with a significance of 0.001. This means that the better the effectiveness of Effectiveness of the use of information systems has a direct effect, the better the delivery quality. In this way, the delivery quality expected by the customer can be realized. When compared with previous research, this shows the same perception that the overall use of Effectiveness of the use of information systems has a direct effect activities must be used to assist work in maintaining the delivery in the company.

Integrity has a direct effect on Delivery Quality. The results of the analysis of this test obtained that the path coefficient of the Integrity variable on the Delivery Quality variable was 0.351 or 35.1 percent with a significance of 0.019. This means that the better the Integrity, the better the Delivery Quality will be—that way, the quality of delivery that customers expect can be carried out. When compared with previous research, this shows the same perception that overall integrity that appears in a person is a mission or

common goal to arise and develop. In this case, it is quality delivery.

Effectiveness of the use of information systems has a direct effect on the Service Level Assessment. The results of the analysis of this test obtained that the path coefficient of the variable Effectiveness of the use of information systems on the Service Level Assessment variable was 0.267 or 26.7 percent with a significance of 0.066. This means that the better the effectiveness of using the Logistics Information System, the Service Level Assessment can be carried out properly according to the agreement and in accordance with customer requests. Compared with previous research, this shows the same perception that the overall use of a Logistics Information System when used as a work tool with high intensity/frequency can affect a good judgment.

Integrity has a direct effect on Service Level Assessment. The results of the analysis of this test obtained that the path coefficient of the Integrity variable on the Service Level Assessment variable was 0.386 or 38.6 percent with a significance of 0.005. This means that the better the Integrity, the Service Level Assessment can be carried out properly according to the agreement and in accordance with customer requests. When compared with previous research, this shows the same perception that performance that has good performance in daily work greatly affects the assessment of service level if employees carry out their duties appropriately.

Delivery Quality has a direct effect on Service Level Assessment. The results of the analysis of this test obtained that the path coefficient of the Delivery Quality variable on the Service Level Assessment variable was 0.328 or 32.8 percent with a significance of 0.033. This means that the better the Delivery Quality, the Service Level Assessment can be carried out properly according to the agreement and in accordance with customer requests. When compared with previous research, this shows the same perception that the more consistent the quality provided will have an impact on the company's ability to exceed customer expectations written in the service level assessment.

Delivery Quality does not function as a mediator or mediating the effect of the Effectiveness of using Logistics Information Systems on Service Level Assessment. This means that the quality of delivery produced by prioritizing the effectiveness of using the Logistics Information System is considered unable to increase the Service Level Assessment. really maximize the quality associated with the service level assessment.

Delivery Quality is able to function as a mediator or mediate the influence of Integrity on Service Level Assessment. This means that the appropriate Delivery Quality for Integrity carried out by company employees is able to increase Service Level Assessment so that Delivery Quality as an intervening variable is proven to function to strengthen the influence of Integrity on Service Level Assessment. When compared with previous research, this shows the same perception that the maximum performance that is produced

greatly affects the quality as reflected in the service level assessment.

VII. CONCLUSION

From the results of research and overall analysis, some conclusions can be drawn as follows:

- Effectiveness of the use of information systems has a direct effect on the Quality of Delivery at PT. Agility International. This can be interpreted that maximizing the existing system is used to maintain the alignment of work in quality delivery.
- 2. Integrity directly affects the quality of delivery at PT. Agility International. This can be interpreted that the integrity of individual employees that actually occurs can lead to the achievement of the company's common goals, namely quality delivery.
- Effectiveness of the use of information systems has a
 direct effect on the Service Level Assessment at PT.
 Agility International. This can be interpreted that
 maximizing the existing system in meeting customer
 needs greatly affects the full assessment.
- 4. Integrity has a direct effect on Service Level Assessment at PT. Agility International. This can be interpreted that the integrity of individual employees that actually occurs can meet and even exceed the customer's wishes that are poured out in the assessment given.
- 5. Delivery Quality has a direct effect on Service Level Assessment at PT. Agility International. This can be interpreted that by providing the best quality in delivery, it can meet and even exceed the customer's wishes that are poured out in the assessment given.
- 6. Quality of Delivery is not able to function as a mediator or mediate the indirect effect of the effectiveness of the use of Logistics Information Systems on Service Level Assessment at PT. Agility International. This can be interpreted that the use of the existing system can always improve the quality of delivery which will then be reflected in the assessment given.
- 7. Quality of Delivery is able to function as a mediator or mediate the indirect influence of Integrity on Service Level Assessment at PT. Agility International. This can be interpreted that the integrity of individual employees that actually occurs can improve the quality of delivery which will then be reflected in the assessment given.

VIII. RECOMMENDATION

Based on the conclusions above, the authors provide suggestions and recommendations as follows:

- 1. The need for monitoring statistics on the use of the Logistics Information System in order to maximize the effectiveness of usage to support operational activities.
- 2. Conducting evaluation and refreshment training on the use of the Logistics Information System used by the company's internals.
- The need for a reward or appreciation program given by Management to employees to encourage employee Integrity to be more motivated in order to improve personal qualities that will affect the performance provided.

- 4. Distribute customer surveys to customers that can be used to evaluate the services provided, including employee performance from the customer's point of view.
- 5. Conducting job reviews (operations review) carefully to maintain the quality of service provided to customers.

IX. IMPLICATION

If the recommendations are not implemented, it will affect the following points:

- 1. If monitoring of statistics on the use of the Logistics Information System is not carried out, employees will return to carrying out their duties manually and traditionally. This can cause delays in delivering service to customers, and the system owned by the company is not used optimally and becomes useless.
- 2. If the evaluation and refreshment training on the use of the Logistics Information System are not carried out regularly, the use of the internal system within the company will not be maximized which will have an impact on the assessment of service by customers to the company.
- 3. If a rewarding program for employees is not held, there is a possibility that the employee does not do his job optimally and the worst thing that will happen is the absence of Employee Integrity which can affect the decline in operational activities.
- 4. If the customer survey is not distributed by the company to the customer, the company will not know what the customer actually feels about the service provided by the company. If something is not in accordance with the customer's wishes and the company does not evaluate it, the impact that will arise is that the customer will switch to another company.
- 5. If the job review or operations review is not carried out, this will have an impact on daily work activities that are not optimal, which is reflected in the poor quality of service for delivery to customers.

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