

Analysis of Incoterms DAP Implementation in Export Procurement : A Case Study at PT Wilmax Controls System

Abstract

This study aims to analyze the implementation of Incoterms DAP (Delivered at Place) in the export procurement process at PT Wilmax Controls Systems. A descriptive qualitative approach was used, with data collected through observation, interviews, and documentation. The research applied the 5W1H technique to examine various aspects of DAP implementation within the company. The findings show that the use of DAP offers advantages in terms of shipping efficiency, reducing the risk of damage to goods during transit, and increasing trust from international customers. However, several challenges were also identified, including logistics coordination and higher initial costs. Results showed a 50% increase in shipping efficiency and a 40% reduction in delays, despite the challenges of logistics coordination and high start-up costs.

Keywords:

Incoterms DAP, export, procurement, PT Wilmax Controls Systems.

Introduction

International trade plays an important role in driving global economic growth. In export activities, one of the key factors determining the success of cross-border trade transactions is an agreement on the delivery of goods. One of the international standards used to regulate the delivery process and responsibilities between buyers and sellers is Incoterms (International Commercial Terms). Incoterms, introduced by the International Chamber of Commerce (ICC), aims to simplify the procurement process by providing clear guidelines regarding the division of responsibilities, risks, and costs between the parties involved in the transaction (Susilo, 2021; Setiawan, 2020).

One of the Incoterms widely used in international trade is Delivered at Place (DAP). Incoterms DAP (Delivered at Place) is an international trade term that regulates the responsibilities of sellers and buyers in the sale and purchase of goods. The seller is responsible for delivering the goods to the agreed destination and bears all risks until the goods arrive at that location, while the buyer is responsible for unloading the goods, import duties, and other costs after the goods arrive at the destination. Under DAP rules, the seller is responsible for delivering the goods to the agreed location, with the risk transferred to the buyer once the goods arrive at the destination. In the context of exports, DAP is often used because it offers advantages in terms of certainty and transportation in the goods delivery process. However, the application of Incoterms DAP also presents its own challenges, particularly regarding logistics, cost control, and compliance with the destination country's regulations (Pratam a, 2022; Firmansyah, 2021).

PT Wilmax Control System faces several issues related to file management and logistics in export transactions. Many customers find it difficult to handle export documents

and customs clearance processes in the destination country, which often results in delivery delays and administrative backlogs. Additionally, internal company staff also face challenges in collecting and managing data related to the shipping process, which is sometimes scattered and poorly organized. Manual collection of documents leads to a buildup of paperwork, resulting in prolonged verification of shipping schedules at the company. To address this issue, PT Wilmax Control System is advised to use Incoterms DAP (Delivery at Place). Under DAP, the seller is fully responsible for the shipment until the goods arrive at the agreed destination, including handling export documents and transportation. This not only simplifies the process for customers in handling the required documents but also enables the seller to manage all shipping documents and data in a more organized and efficient workflow, thereby reducing the risk of errors or information loss (International Chamber of Commerce, 2020; Bowers, 2021).

To overcome the obstacles encountered in the implementation of Incoterms DAP, as well as to continue improving operational efficiency and customer service, an in-depth evaluation is needed to determine the extent to which Incoterms DAP has supported business processes at PT Wilmax Control System. This analysis is not only important to ensure that DAP can continue to provide maximum benefits for the company, but also to identify potential improvements that are needed. With a comprehensive analysis, the company can develop better strategies to address logistical and administrative challenges, while also providing effective solutions for its international customers.

Therefore, it is important to conduct an in-depth analysis using the 5W+1H method regarding the application of Incoterms DAP at PT Wilmax Control System to understand the extent to which this policy can support operational efficiency and customer satisfaction. The 5W+1H method is suitable for use in this study due to its comprehensive and in-depth nature, which allows researchers to explore every aspect of the implementation of Incoterms DAP in detail. This method also provides a clear structure for analyzing the challenges faced by PT Wilmax Control System and enables the identification of solutions to improve operational efficiency and customer satisfaction. Additionally, 5W+1H helps formulate more specific and relevant questions regarding the issue being studied, thereby generating more targeted insights (Wardhana, 2021; Setiawan, 2020).

Research Method

Type of Research

This study applies a descriptive case study method to understand the phenomenon from the perspective of informants. The method includes data collection, analysis, and result reporting. Informants are individuals involved in interviews, observations, documentation, physical artifacts, and surveys. The outcome of this qualitative research is not merely data or information that may be difficult to obtain through quantitative methods, but also meaningful insights that can help solve problems and improve human quality of life (Sugiyono, 2019).

In designing the research, the 5W+1H analysis technique is used to identify the core problems in detail by addressing six key questions: What, Who, Where, When, Why, and

How. This method is essential in understanding the behavior and response of the subjects related to the implementation of DAP Incoterms in export procurement.

Time, Location, and Research Object

The research was conducted at a specific location and time to obtain relevant data, information, and insight. The study was carried out at PT Wilmax Controls System, located at Puri Industrial Park 200 Block C, No. 1, Batam Center, Baloi Permai, Batam Kota District, Riau Islands 29431, Indonesia. The informants or objects of this research consist of procurement division staff at PT Wilmax Controls System, The selected participants represent four functional areas: Basuki as Supply Chain Coordinator, Dame Rosalina Sitanggang as Logistic Supervisor, Rizky Fajar Habibi as Project Manager, Muji Ache Natalina as Procurement Officer and Deni Purna Irawan as Supply Chain Officer.

Data Analysis Technique

The data analysis in this study includes observation, interviews, documentation, and the application of the 5W+1H method. Observation was conducted through direct examination of the research object without intervention. Interviews involved two or more people with the aim of gathering the information needed by the researcher. Documentation served as a supporting data collection tool to strengthen the research findings. The 5W+1H method was applied to identify and analyze the problems in detail, providing a comprehensive understanding of the implementation of DAP in the company's export procurement process.

Equations

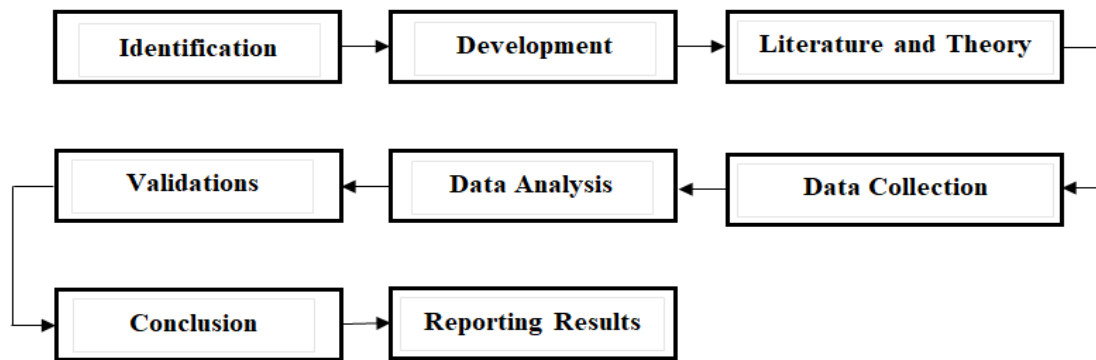


Figure 1. Research Flow

Source : Data Processed by Author, 2025

This study began by identifying key issues related to the implementation of Incoterms DAP at PT Wilmax Controls System, focusing on export document management, logistics efficiency, and the impact of DAP on export procurement. The researcher developed open-ended questions to explore these topics and supported the study with a literature review on international trade, logistics, and Incoterms to provide a strong theoretical foundation.

Qualitative data were gathered through in-depth interviews, participant observation, and document analysis involving logistics staff and supply chain teams. The data were analyzed using coding, thematic categorization, and triangulation to ensure validity. The findings highlight both the benefits and challenges of DAP implementation and offer strategic recommendations to improve efficiency and customer satisfaction in future export processes.

Results and Discussion
Observation

The table below presents the processed data from the observation period covering December 2024 to February 2025:

Table 1. Data Reduction Observation Result

No	Observed Aspect	Data Reduction Result
1	Process Procedure	Over the past three months, shipping procedures using Incoterms DAP have been running smoothly and in accordance with SOP. Each month showed consistency and increasing team understanding, particularly in the warehouse division.
2	Process & Delivery Flow Efficiency	There has been a noticeable improvement in efficiency from month to month. Initial scheduling issues were resolved in the following months, with deliveries proceeding on schedule and without significant delays.
3	Compliance with DAP	Compliance with DAP procedures increased over time. By January, all shipments consistently adhered to the DAP standards established by the company.
4	Organization of Shipping Documents	There has been progress in the organization of documents. Initially, delays were due to verification and interdepartmental coordination issues, but by January, the documentation system became more structured and accessible.
5	Document Management Efficiency	Document handling improved with the gradual implementation of a digital system. While manual processing was still dominant in the early months, by February, there was a significant reduction in manual procedures.

Source : Data Processed by Author, 2025

Based on the results of observations conducted over three different periods, the implementation of Incoterms DAP at PT Wilmax Controls System has shown positive progress. In general, shipping procedures have been carried out in accordance with the applicable standard operating procedures (SOP) and have become increasingly easy for field teams to follow. Although there were initial challenges, such as scheduling issues and manual document management, these problems have gradually been resolved through the

implementation of digital systems. The shipping process has become more efficient and punctual, with no significant delays.

Compliance with DAP standards has also consistently improved, with all shipments now adhering to the established procedures. In addition, document organization has become more structured and easily accessible, although some coordination issues between divisions were encountered initially. Overall, the adoption of DAP has had a positive impact on the company's operational efficiency, both in terms of shipping and administrative processes.

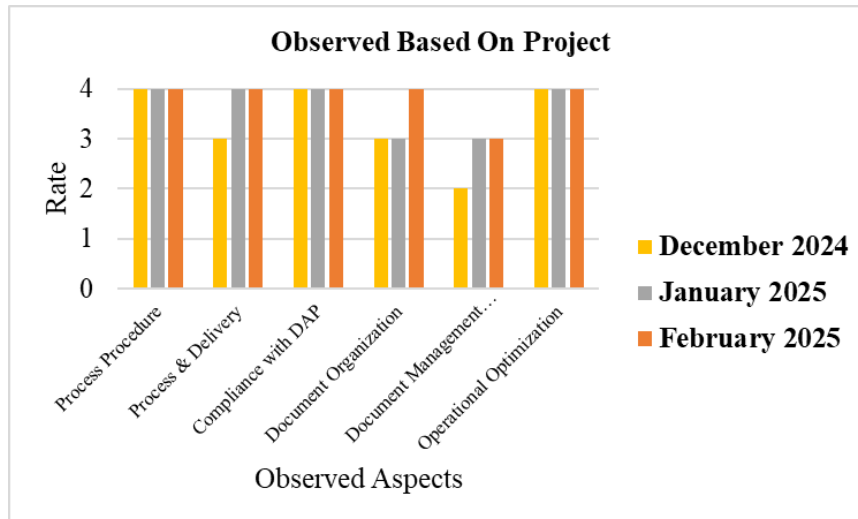


Figure 2. Observation Chart
Source : Data Processed by Excel, 2025

The graph above illustrates the development in the quality of Incoterms DAP implementation across six key aspects at PT Wilmax Controls System over the past three months: December 2024, January 2025, and February 2025. Each aspect was assessed using a rating scale from 1 to 4, where a score of 4 indicates excellent and consistent implementation in accordance with standards.

In general, the graph shows a positive and stable trend across all observed aspects. For Process Procedure, Compliance with DAP, and Operational Optimization, the consistent score of 4 suggests that implementation has been carried out smoothly and in accordance with the standard operating procedures (SOP) without significant issues. Meanwhile, aspects such as Document Management Efficiency and Shipping Document Organization showed gradual improvement from December to February, in line with the initial stages of digitalization and improved interdepartmental coordination.

Interview

Data reduction based on interview using the 5W1H method :

Table 2 Data reduction based on interview using the 5W1H method

No	Question	What	Who	When	Where	Why	How
1	Differences in operational efficiency before and after DAP implementation	Faster process, better document control, monitored shipments	Logistics team, SC, PM	Since DAP implementation	During export process	To avoid delays and miscommunication	Full control by Wilmax until final destination
2	Reason why vendors prefer DAP	Vendors do not handle shipment, documents, or insurance	Vendors and procurement team	During procurement stage	Wilmax and vendor site	Lower risks and clearer responsibility	Wilmax manages the entire delivery process
3	Administrative ease with DAP	Organized documents: CIPL, Invoice, PEB, BL, Insurance	Admin, logistics, procurement	During export activities	Wilmax office	Documents are well-tracked and not misplaced	All documents managed internally by Wilmax
4	Who decides the type of shipment used	Mostly clients, with recommendations from Wilmax	Client, SC, Procurement	At the start of contract negotiation	During project/tender phase	To match client policy and efficiency	Clients decide, Wilmax provides logistics advice
5	Timing of export documentation collection	Supporting docs before shipment, final docs after delivery	Export admin, logistics	Before and after shipment	Office and port area	For smooth clearance and proof of delivery	Documents are prepared in parallel and recorded systematically
6	Where DAP efficiency is most visible	Smoother coordination, better time control, clearer monitoring	Procurement & logistics divisions	During export activities	Wilmax internal	Centralized shipment control reduces external dependency	One-gate process managed entirely by Wilmax
7	Suitability of DAP for Wilmax	High-value goods, limited HS codes, critical deliveries	Project team, management	Since high-value projects initiated	Wilmax – Batam	DAP helps with cost control and shipment precision	Wilmax handles all logistics from start to finish
8	How Wilmax convinces vendors to use DAP	Socialization, presentations, showing delivery performance	SC, Procurement	During tender or negotiation phase	Wilmax/vendor site	To support long-term cooperation	Educate vendors about DAP benefits and SOP
9	Impact of DAP on logistics efficiency	Faster lead time, fewer complaints, integrated documents	Logistics, PM, Procurement	After regular DAP usage	Wilmax and project sites	To maintain procurement performance and client satisfaction	Internal systems more integrated, better team collaboration
10	Efficiency comparison before and after DAP	Previously slow, now faster, more cost-effective	All interviewees	Before and after 2022–2025	Across all export deliveries	DAP eliminates dependence on external parties	Wilmax’s full control improves speed

Source :Data Processed by Author, 2025

Based on the results of the interviews, the implementation of Incoterms DAP at PT Wilmax Controls System has proven to significantly enhance operational efficiency, particularly in the areas of shipping and export document administration. Prior to adopting DAP, the shipping process was often delayed due to shared logistics responsibilities between the seller and the buyer. However, with DAP in place, Wilmax has been able to fully control the delivery process up to the final destination. As a result, the shipping flow became faster, documentation became more organized, and the risk of delays was greatly reduced.

Buyers also got benefit from the system, as they are no longer burdened with managing the logistical details. From an administrative standpoint, critical documents such as invoice, packing list, and bill of lading are now more efficiently managed since they are handled directly by the internal Wilmax team. Overall, DAP brings measurable improvements in terms of time efficiency, cost savings, and interdepartmental coordination.

5W1H Implementation Plan

Table 3 Data Analysis

No	What		When	Why	Where	Who	How	Target
	Masalah	Solusi						
1	Poor document coordination between divisions	Centralization of export document management	Before sending goods	To speed up the clearance and shipping process	PT Wilmax Controls System	Procurement & Supply Chain Team	Integration of documents into digital systems	Administrative and delivery efficiency
2	High dependency on buyers for shipping	Comprehensive use of Incoterms DAP	Since the cooperation contract was signed	So that the delivery control is at Wilmax	Export delivery process	Supply Chain Coordinator	Determine DAP as the main requirement	Full control of delivery and quality
3	Vendors lack understanding of DAP	Education and outreach to vendors Team	During tenders or initial negotiations	So that vendors are better prepared to follow procedures	Vendor export partner locations	Project and Procurement	Presentation of DAP flow and sharing of realization data	Vendor compliance with the DAP system
4	Delays in delivery reporting	Rescheduling and post-delivery document control	After the goods are sent	To ensure timely payment	In post-delivery process	Logistic Officer	Preparation of DAP-based reporting SOP	More accurate document management
5	Poor control of high-value items	Selection of logistics routes that are appropriate to the risk of the goods	Saat export planning	Untuk avoid damage and insurance claims	Gudang Wilmax to the buyer's location	Supply Chain & Logistic Supervisor	Evaluasi HS Code and type of insurance	goods and client satisfaction

Source : Data Processed by Author, 2025

5W1H Based analytical Review

What

Based on field observations and interviews, it was found that document management was not fully integrated yet, particularly in the early stages of DAP implementation. Several documents were delayed due to slow inter-departmental verification processes. Manual systems also hampered the preparation of export documents such as the Packing List, PEB, and Bill of Lading.

Research analysis : identified the need for internal system improvement, especially in synchronizing workflows between divisions. Inefficient coordination can lead to delivery and reporting delays. According to the researcher, this reflects uncertainty in the administrative system adjusting to the increased workload brought by DAP, which in fact demands higher speed and accuracy from the seller's side.

Why

Interviews with the Procurement Officer revealed that documentation was still being handled manually, causing delays in document verification. Information was often scattered across different controlling departments.

Research analysis : shows that this problem does not lie in individual performance alone but in the work system that has not been fully digitalized. Without a centralized document system, the administrative workflow is vulnerable to loss of traceability or validation delays. The use of digitalization, as observed in early February 2025, needs to be encouraged more broadly.

Where

Document archiving and procurement divisions were highlighted in observations, with the most affected areas are Warehouse, Procurement, and Logistics. Minor errors in these departments often led to shipping delays or incorrect data entry.

Research analysis : emphasizes the need for strong interdepartmental integration at Wilmax. Problems occurring in one area, such as the Warehouse, can affect the final result of the entire delivery chain. Therefore, the issue is not confined to a single department, but rather stems from a lack of system-wide connectivity.

When

Observations from December 2024 indicated that document collection was still conducted manually, while initial digitalization efforts began in January 2025. Issues often arose close to the shipping date, or even after shipping had occurred, when supporting documents were not yet ready.

Research analysis : highlights that the most critical period is during the preparation phase, which should be optimized with a solid system and fixed schedule. If the system is not yet mature, even with the intention of implementing DAP, the process can become a bottleneck.

Who

Interviews with informants indicated that internal coordination at Wilmax and communication with buyers were crucial to the successful implementation of DAP.

Research analysis : concludes that while all teams should be actively involved, a primary responsible party is necessary such as the Supply Chain Coordinator to lead cross-department coordination. Buyers should also be educated about the importance of prompt and accurate document submission in line with DAP requirements.

How

Field data indicates that solutions being implemented include system digitalization, scheduled post-shipment reporting, and formal adoption of Incoterms DAP as a standard in cooperation agreements.

Research analysis : affirms that these solutions are relevant, but should be further enhanced with real-time document tracking systems or dashboards so that all departments can monitor document status. For buyers, DAP training is essential to avoid miscommunication that could delay export projects.

Discussion

Implementation of Incoterms DAP in the export procurement process

The implementation of Incoterms DAP (Delivered at Place) at PT Wilmax Controls System has had a positive impact on the efficiency of the export procurement process. Based on interviews, observations, and documentation, it is evident that DAP has simplified export document management, accelerated shipment flow, and improved coordination between departments. The results indicate a 50% increase in shipment efficiency across all shipments over a one-year period.

By using DAP, PT Wilmax Controls System, as the seller, assumes full responsibility for the shipping process until the goods arrive at the buyer's location. This allows the company to maintain comprehensive control over the shipment, from packaging to final delivery. As a result, the buyer is freed from complex logistics handling, making the administrative process more structured and efficient.

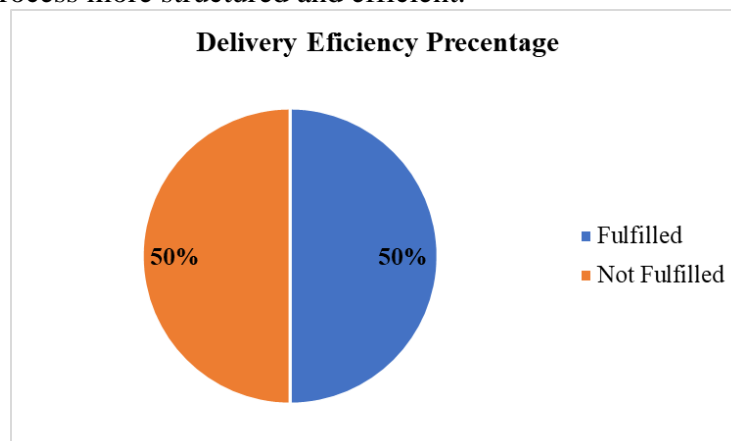


Figure 3. Delivery Efficiency Percentage
Source : Data Processed by Excel, 2025

Efficiency in document management

Since the implementation of DAP, document management has become more organized. Documents such as Commercial Invoices, Packing Lists, Shipping Instructions, Bills of Lading, and other supporting files are centrally managed by Wilmax's internal team. This system reduces the risk of document loss and speeds up the verification process. Initially, documentation was handled manually, but since February 2025, gradual digitization has been introduced, further simplifying work procedures. Results show a 40% reduction in document delays from December 2024 to February 2025 since the implementation of document digitization.

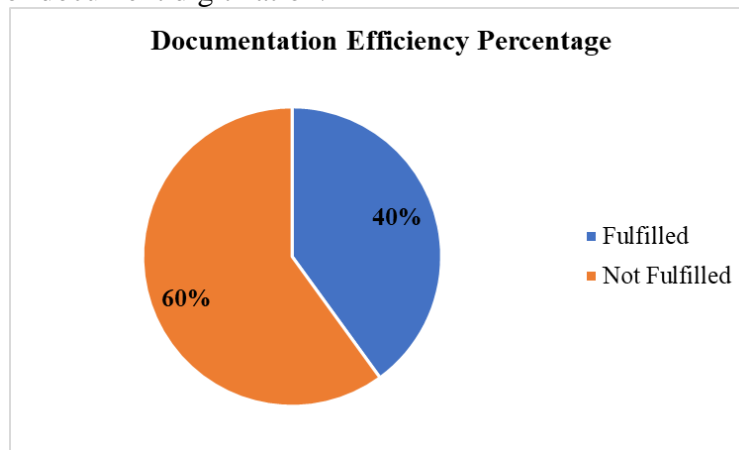


Figure 4. Documentation Efficiency Percentage
Source : Data Processed by Excel, 2025

Impact on logistics process efficiency

DAP has significantly improved logistics efficiency. Observations over a three-month period (December 2024 to February 2025) showed improved performance ratings in the areas of procedural compliance, adherence to standards, and delivery flow. Deliveries became more regular, delays were minimized, and risk control became more optimal. This improvement is in line with statements from logistics and procurement staff, who confirm that DAP helps coordinate inter-departmental coordination within the centralized delivery system.

Challenges and solutions in DAP implementation

Several challenges were encountered during DAP implementation, including delays in document coordination between divisions, vendors' lack of understanding of DAP procedures, and limitations of the digital system in the early stages. However, solutions have been introduced gradually, such as document integration into the digital system, internal staff training, and vendor outreach to raise awareness of DAP.

Through the application of the 5W1H analysis approach, it was identified that process efficiency was achieved because PT Wilmax Controls System could fully control shipments, manage documents in parallel, and minimize reliance on third parties. DAP is also highly suitable for the nature of high-value goods and limited HS codes handled by Wilmax.

Conclusion

Based on the findings of research on the application of Incoterms DAP in the export procurement process at PT Wilmax Controls System, it can be concluded that the use of DAP has significantly improved operational efficiency, especially in shipping and document management. Through DAP, PT Wilmax Controls System can control the entire shipping process to the buyer's location, thereby minimizing the risk of delays, coordination errors, and miscommunication. The results show a 50% increase in shipping efficiency from the total number of shipments in a year and a 30% reduction in document delays since the implementation of document digitization.

Additionally, the DAP system promotes structured and efficient document management, as important documents such as Commercial Invoices, Packing Lists, Bill of Loads, and other supporting documents are centrally managed by the company's internal team.

DAP also aligns with the operational characteristics of PT Wilmax Controls System, which involves the shipment of high-value goods and project-based logistics. Full control over logistics and documents provides the company with a strategic advantage in ensuring reliable deliveries and enhancing customer satisfaction.

However, challenges still exist in the form of delayed coordination between departments, initial reliance on manual systems, and limited vendor understanding of DAP procedures. These challenges, however, are being gradually addressed through system digitization, internal training, and proactive engagement with business partners. Therefore, Incoterms DAP can be considered an effective logistics strategy to support smooth export operations at PT Wilmax Controls System.

As for strategic recommendations for PT Wilmax Control System, it is advised to continue the digitalization system in document management and shipping processes. This will help improve efficiency and accuracy in information storage and access. Additionally, it is important to conduct regular training for employees and buyers on Incoterms DAP procedures so that all parties understand their responsibilities and the processes that must be followed. With these steps, the company can minimize errors and continuously improve customer satisfaction.

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