

# Customer Knowledge Management on E-commerce Shopee Application

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## Abstract

In recent years, the e-commerce market in Thailand has continued to increase. This paper takes a furniture decoration store in Thailand that has been on the Shopee platform for 5 years as the research object. According to the evaluation of target customers, this paper analyzes customer pain points and proposes solutions. The effectiveness of the solution is then tested through After-Action Review, aiming to use customer knowledge management to improve the store's customer satisfaction.

## Keywords

After-Action Review, Customer Knowledge Management, E-commerce, Shopee.

## INTRODUCTION

In recent years, Thailand's e-commerce industry has flourished and has become one of the most dynamic and growth-potential markets in Southeast Asia. With the popularization of the Internet and smartphones, more and more Thai consumers have begun to turn to online shopping, driving the rapid expansion of e-commerce platforms. From traditional retail to fresh food, fashion apparel, electronic products and other commodities, online sales channels cover a wide range and meet the needs of different consumers. In addition, the government's policy support and the continuous improvement of infrastructure construction have also provided a strong guarantee for the development of the e-commerce industry.

The Thai government has introduced a series of policies and measures to promote the development of the digital economy in recent years, such as the "Thailand 4.0" strategy, which aims to promote the country's transformation from an economic model dominated by manufacturing to a modern economy with technological innovation and digital economy as the core. These policies have not only promoted the popularization of e-commerce, but also attracted a large number of domestic and foreign investors and enterprises to enter the Thai market, further stimulating the vitality and innovation of the industry.

The popularity of social media and live streaming has further promoted the development of e-commerce and changed consumers' shopping habits and the marketing model of the market. Through social media platforms, merchants can interact directly with consumers, display product features and usage effects in real time, and enhance consumers' desire to buy and trust. In addition, live streaming, as an emerging marketing method, not only increases product exposure and sales, but also allows consumers to have more participation and fun in the shopping process.

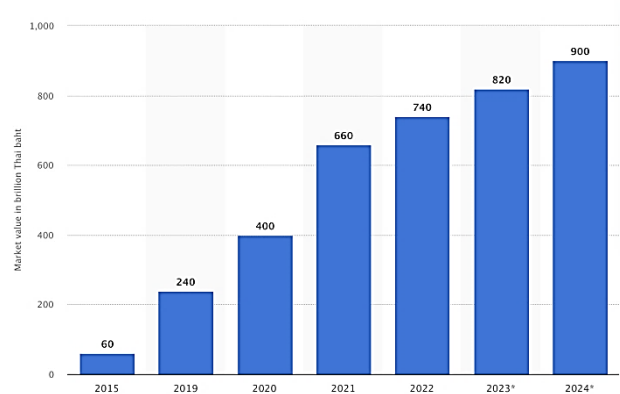


Figure 1. The market value of Thai e-commerce

According to the data from Statista, the market value of Thai e-commerce has been rising since 2019. In general, the Thai e-commerce industry is experiencing an unprecedented period of prosperity, creating new opportunities for economic growth and employment. In this process, the scale and influence of the Thai e-commerce market have continued to expand, attracting more and more attention and investment, showing strong development potential and broad prospects.

In fact, since the Internet was opened to the public in 1991, e-commerce has slowly sprouted around the world. It has a long history. There have been many studies on e-commerce, including those on system and information security of network systems and organizational structure management of enterprises and platforms. In recent years, more studies have been conducted on factors affecting customer purchase intention. Previous studies have mentioned that hedonism, utilitarianism and trust are the main factors affecting customer purchase motivation based on the Theory of Reasoned Action (TRA), the Theory of Planned Behaviors (TPB) and the Technology Acceptance Model (TAM). They conducted a reliable survey on Baby Boomers, Generations X, Y, and Z in Thailand and found that utilitarian motivation is the most important factor affecting consumers' continued

purchase intention[1]. Another study used Exploratory factor analysis (EFA) to survey Thai consumers and found that the main reason they chose online shopping was convenience, while most customers were concerned about product prices[2]. And less than 30% of online shopping customers will visit more than twice in a year[3]. Because this article is based on customer knowledge management research, it also falls into the category of factors that affect customer purchase intention. However, this article studies the behaviors and psychology of specific customers of specific stores, which is more in line with reality and has positive significance in customer research in e-commerce.

## LITERATURE REVIEW

### Kano Questionnaire

The Kano questionnaire, developed by Professor Noriaki Kano in the 1980s, is a powerful tool used in product development and customer satisfaction research. Named after its creator, the Kano questionnaire aims to uncover customers' preferences and priorities regarding product features by categorizing them into different satisfaction levels: basic, performance, and excitement[4].

Respondents filling out the questionnaire were asked to answer questions on two dimensions: positive - when the defining characteristics of the product are present and function in the right way, negative - when the defining characteristics are not present or are present to an unsatisfactory degree. Each characteristic is determined by a combination of two answers and can take five values. Thus, 25 variations can be obtained and the type of characteristic can be detected in specific cases[5]. The Kano questionnaire goes beyond traditional satisfaction surveys by distinguishing between features that are expected (basic), desired (performance), and unexpected (excitement), thereby providing valuable insights into customer needs and preferences[6]. By understanding which features drive customer satisfaction and which have the potential to delight, organizations can make informed decisions about product development, prioritize resources effectively, and create offerings that resonate with their target audience. The Kano questionnaire thus serves as a valuable tool for enhancing customer-centricity and competitive advantage in today's dynamic marketplace.

### After Action Review (AAR)

*What is an AAR?*

After Action Review (AAR) is a widely adopted tool for performance evaluation and improvement, originating from military practices and now prevalent in various sectors[7]. An AAR is a structured process designed to review the actions taken during a project or event, assess outcomes, and identify lessons learned[8]. The process involves a facilitator guiding the team through a series of reflective questions: what was expected to happen, what actually occurred, what went well, and what needs improvement[9].

*Why is AAR Conducted?*

The primary purpose of an AAR is to foster organizational learning and continuous improvement by systematically evaluating performance[10]. The benefits of this approach are well-documented, including enhanced team communication, improved performance outcomes, and the development of a culture of accountability[11]. By focusing on actionable insights and future-oriented recommendations, AARs help organizations adapt and evolve based on past experiences. AARs facilitate a culture of learning by encouraging teams to reflect on their experiences and share knowledge[10]. By identifying and addressing gaps in performance, AARs help teams enhance their effectiveness and efficiency. The collaborative nature of AARs fosters teamwork and communication, helping to build stronger, more cohesive teams[7].

### Customer Knowledge Management (CKM)

Before talking about CKM, we need to understand what CRM is? CRM is a strategy and technology used by enterprises to manage and analyze customer interactions and data throughout the customer life cycle. Its goal is to improve customer service relationships, help retain customers and drive sales growth[12]. CRM can systematically collect and store large amounts of customer data, which is a key input for CKM. CKM can use this data to operate, improve customer satisfaction and drive business development. Customer Knowledge Management (CKM) is the process of capturing, sharing, and effectively utilizing customer information and insights to improve organizational decision-making and customer interactions[13]. It encompasses the practices and technologies that enable an organization to acquire and use customer knowledge systematically. CKM involves three main types of knowledge:

Knowledge For Customers: Information provided to customers to enhance their experience and decision-making[14]. Knowledge From Customers: Insights gathered from customers about their preferences, behaviors, and feedback[15]. Knowledge About Customers: Data collected about customers, such as demographics, purchase history, and interaction records[16].

**Table 1. Matrix**

|                    | Knowledge about Customer | Knowledge from Customer | Knowledge for Customer |
|--------------------|--------------------------|-------------------------|------------------------|
| CKM                | X                        | X                       | X                      |
| AAR                |                          |                         | X                      |
| Text mining        | X                        |                         |                        |
| Kano questionnaire |                          | X                       |                        |

This article uses CKM as the main framework, which is mainly divided into knowledge about customer, knowledge from customer and knowledge for customer. In the knowledge about part, text mining is used to analyze customer reviews about this online store. In the knowledge

from part, Kano questionnaire is used to understand the deep needs of customers. In the knowledge for part, AAR is used to adjust and verify the adjustment plan for customer satisfaction.

## MATERIALS AND METHODS

The research subject of this study is a store on the Shopee platform in Thailand, which has been operating for four years. The store mainly sells products in the home decoration category. As a starting point, this study used Customer Knowledge Management (CKM) as the framework to guide the research. The main reason for choosing this store is that, based on interviews, the operator of the store found that the sales growth rate was slow. Therefore, the store wanted to find the reasons for this issue and identify potential problems. Considering this, the study aimed to offer strategies for improvement.

To begin the analysis, this study collected a total of 560 review texts of the top five products since 2020. A total of 597 polar words were initially extracted, and after filtering, 188 were found to be valid, of which 129 were positive words and 59 were negative words. From the above process, the top five high-frequency positive and negative polar words were identified.

Based on this, five improvement strategies were proposed: (1) Add more foam to the packaging; (2) Send orders to the delivery site before 6 PM the next day; (3) Replace plastic bags with cartons; (4) Switch from pre-sale to in-stock; (5) Add reference objects to the product page to help customers judge the size of the product. In order to evaluate these strategies effectively, a Kano-style questionnaire was designed, with each strategy having two descriptions (functional and dysfunctional), for a total of 10 items. A total of 20 valid responses were collected. For each question, customers can choose from the following five options: I like it that way. It must-be that way. I am neutral. I can live with it that way. I dislike it that way. The results of customers choosing these answers correspond to different biases. These results formed the basis for identifying which improvements customers found most impactful.

Meanwhile, in our actual operation, we have implemented operational measures to address customer pain points. We adjusted the packaging process and inventory strategies through subsequent interviews and after-action reviews (AAR) and tracked indicators such as warehouse quantity and product list participation rate.

The organization of this study is a home decoration store that has been opened on Shopee for four years. The store's vision is to make homes more convenient and beautiful. The products sold in this store are all kinds of home decoration products, including various exquisite ornaments, creative vases, wallpapers, table lamps, and paintings. The store has accumulated tens of thousands of sales, and its customers come from people who are willing to buy home decoration on Shopee.

This study adopts a purposive sampling method. As shown

in Figure 2. The sample is selected based on the customer's active time and the possibility of willingness to participate in the study. The purpose of the study is to improve the customer satisfaction of the home decoration store. The potential customers of the home decoration store are interested in home decoration on Shopee. The real customers of the store are people who have purchased products from this home decoration store. Based on the customer's active time, the study selected 811 customers who had purchase records and gave comments in the store in the past three months, from September 1, 2023, to November 30, 2023 as the target group. Through the store backend chat window, a request was initiated, and 57 customers expressed their willingness to cooperate with the store upgrade. Through the distribution of KANO questionnaires, 23 customers responded, of which 20 were valid responses. This study will adopt customer knowledge management to improve customer satisfaction in cross-border e-commerce Thai Shopee shop.

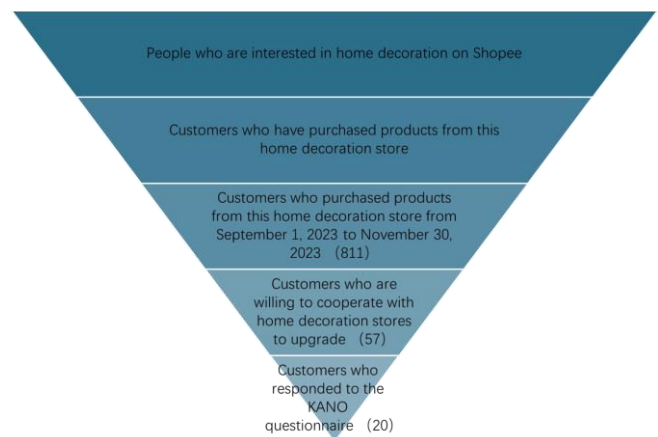


Figure 2. Sample Selection

## RESULTS AND DISCUSSION

### Knowledge About Customer

The research subject of this study is a store on the Shopee platform in Thailand, which has been operating for four years. The store mainly sells products in the home decoration category. As a starting point, this study used Customer Knowledge Management (CKM) as the framework to guide the research. The main reason for choosing this store is that, based on interviews, the operator of the store found that the sales growth rate was slow. Therefore, the store wanted to find the reasons for this issue and identify potential problems. Considering this, the study aimed to offer strategies for improvement.

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polar words were “bad packaging,” “slow delivery,” and “has a flaw.” These findings provided the foundational understanding of what customers value most.

**Table 2.** Top 5 positive words

| Feature   | Sub-feature     | Top 5         | Times |
|-----------|-----------------|---------------|-------|
| Product   | Appearance      | Beautiful     | 52    |
| Logistics | Delivery time   | Fast          | 29    |
| Product   | Price           | Worth         | 18    |
| Product   | Product quality | Good quality  | 15    |
| Logistics | Package         | Well-packaged | 15    |

**Table 3.** Top 5 negative words

| Feature   | Sub-feature     | Top 5         | Times |
|-----------|-----------------|---------------|-------|
| logistics | Package         | Bad packaging | 22    |
| logistics | Delivery time   | slow          | 15    |
| product   | product quality | has a flaw    | 11    |
| product   | size            | small         | 6     |
| product   | product quality | Incomplete    | 5     |

### Knowledge from Customer

Through comparative analysis, we can see that these polar words describe characteristics related to products and logistics. Among them, Logistics-Delivery time-Fast in the positive words corresponds to Logistics-Delivery time-slow in the negative words. It is not difficult to see that Delivery time is a pain point that affects customer evaluation, and Logistics-Package-Well-packaged in the positive words corresponds to Logistics-Package-Bad packaging in the negative words. We can see that another pain point that affects customer evaluation is the quality of packaging. Product-Product quality-Good quality appeared in the positive words, while product-product quality-has a flaw and product-product quality-Incomplete appeared in the negative words. It is not difficult to see that product quality is also a pain point that customers care about. Therefore, based on the above analysis, we summarized three customer pain points:

1. The package's condition is good or not
2. Delivery time is fast or slow
3. The product quality is good or not.

For these three pain points, 5 corresponding Kano model strategies were designed:

1. Add more foam to package.
2. Guarantee every order can be delivered to the express delivery site before 6pm on the next day when the order is placed.
3. Using a carton instead of a plastic bag as the outer packaging.
4. Keep items in stock rather than on pre-sale
5. Add reference objects to the product display page so that customers can clearly know the size of the item.

In order to evaluate these strategies effectively, a Kano-style questionnaire was designed. These results formed the basis for identifying which improvements customers found most impactful.

The questions in the questionnaire are as follows:

Q1: The goods customer receive are packed in 3-4 layers

of bubbles.

Q2: Customer can see the order is on delivery on the Shopee app before 6pm the next day after each order is placed.

Q3: The shop add size information to the product display page.

Q4: The outer packaging is a carton instead of a plastic bag.

Q5: The item customer purchased is in stock.

The results of customers choosing these answers correspond to different biases, the result of it as shown in the figure below.

**Table 4.** Result of Kano questionnaire

| Feature   | Question | A  | O  | M | I | R | Q | Total |
|-----------|----------|----|----|---|---|---|---|-------|
| Logistics | 1        | 11 | 2  | 3 | 4 | 0 | 0 | 20    |
|           | 2        | 13 | 2  | 1 | 4 | 0 | 0 | 20    |
|           | 3        | 9  | 5  | 1 | 5 | 0 | 0 | 20    |
|           | 4        | 3  | 14 | 3 | 0 | 0 | 0 | 20    |
| Products  | 5        | 11 | 5  | 4 | 0 | 0 | 0 | 20    |

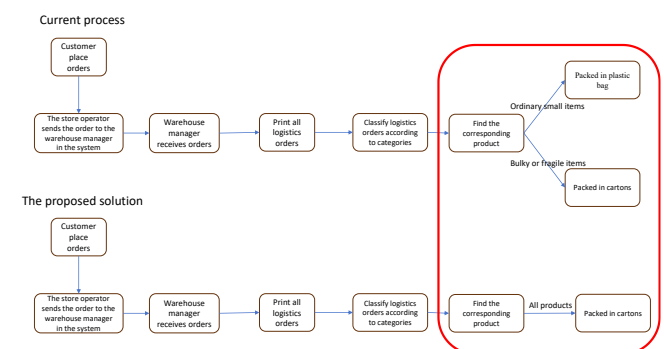
After conducting the Kano-style questionnaire, the responses were classified using the Kano model. The satisfaction coefficients of each item were calculated, and a four-quadrant matrix was constructed. The results showed that Q4 (carton packaging) and Q5 (in-stock availability) had the most positive impact on customer satisfaction. Thus, these two strategies were selected for practical implementation and evaluation.



**Figure 3.** 4-Quadrant Matrix of Kano questionnaire

### Knowledge for Customer

**For Q4: The outer packaging is a carton instead of a plastic bag.**

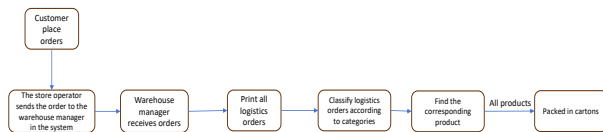


**Figure 4.** Packaging process 1

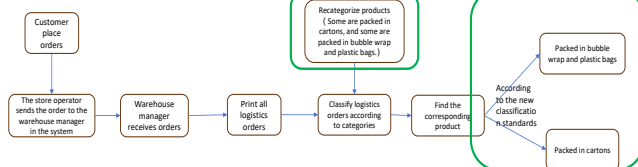


At the beginning, based on the existing process, we proposed an improved process as shown in the figure. The main change was to use cartons to pack all products. But when we gave the plan to the company manager and asked for his opinion, he said in the interview that this process was convenient for packaging but increased expenses. Considering that the company needs to save expenses, he suggested that we reclassify the products and group together the products that do not need to use cartons. This will achieve the effect of meeting customer needs and saving expenses for the company. Therefore, we proposed the adjustment plan shown in the figure.

The proposed solution

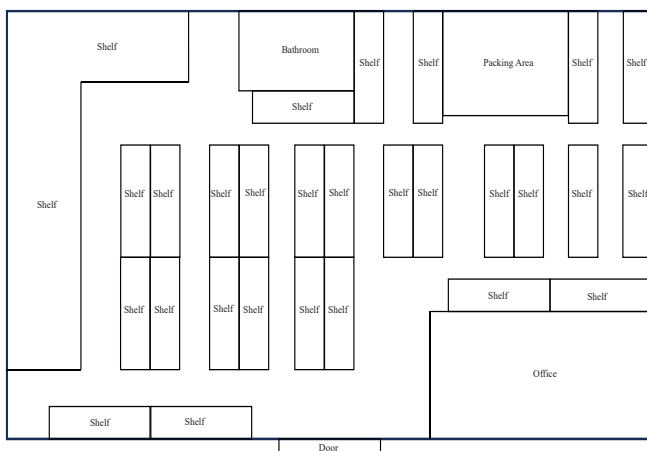


The revised version

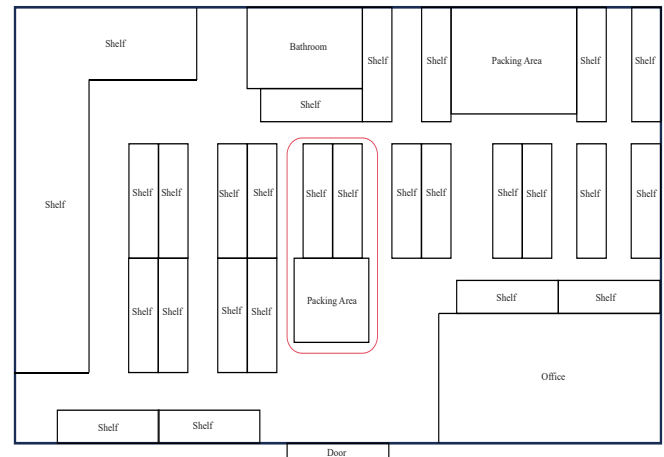


**Figure 5.** Packaging process

In the new plan, we added an order classification step to facilitate the warehouse manager to identify products when packing. This plan was affirmed by the company's managers. One week after the implementation, we conducted an AAR with the warehouse manager through an online interview. The main questions in the interview were: 1. Have you clearly understood the purpose of this adjustment and what you need to do? 2. How did you operate during this adjustment process? 3. In the whole process of this adjustment, what do you think are the advantages and disadvantages? 4. What do you plan to do in future operations?



**Figure 6.** Warehouse layout before adjustment



**Figure 7.** Warehouse layout after adjustment

In his answer, the warehouse manager reflected on the difficulties he encountered during the implementation process. Although the reduction in the number of warehouse returns can vaguely show the improvement of customer satisfaction, the packaging process has become more complicated due to the new classification standards for whether the product packaging uses plastic bags or cartons, while the product storage location in the warehouse is still based on the original standards. He hopes to rearrange the product position. For this reason, we assisted the warehouse manager in adjusting the placement of the warehouse products and added a special operation table for plastic bag packaging, as shown in Figures 5 and 6.

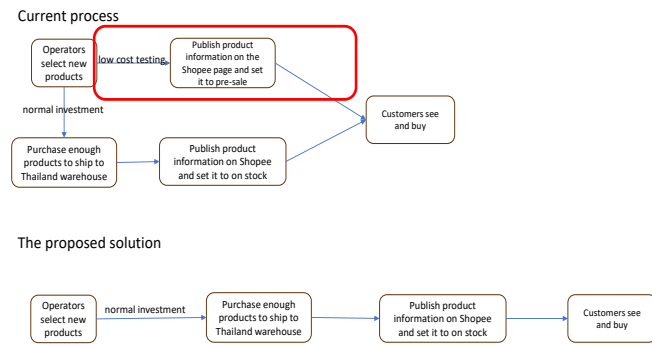
After one month of such adjustment, we summarized the return volume data of the warehouse before and after the adjustment. As shown in the figure7, April 8 was the date when we adjusted the warehouse layout. It is not difficult to see that the number of returned items has a downward trend, which indirectly proves the effectiveness of the new plan after adjustment. We will continue to track the relevant situation and adjust in the future.

| Date  | f Return | Date  | f Return | Date  | f Return | Date  | f Return | Date  | f Return packages |
|-------|----------|-------|----------|-------|----------|-------|----------|-------|-------------------|
| 3.25  | 69       | 4.1   | 57       | 4.8   | 66       | 4.15  | 51       | 4.22  | 45                |
| 3.26  | 15       | 4.2   | 34       | 4.9   | 15       | 4.16  | 22       | 4.23  | 37                |
| 3.27  | 29       | 4.3   | 16       | 4.1   | 30       | 4.17  | 10       | 4.24  | 11                |
| 3.28  | 33       | 4.4   | 47       | 4.11  | 5        | 4.18  | 34       | 4.25  | 6                 |
| 3.29  | 41       | 4.5   | 38       | 4.12  | 52       | 4.19  | 27       | 4.26  | 23                |
| 3.30  | 35       | 4.6   | 26       | 4.13  | 24       | 4.2   | 30       | 4.27  | 39                |
| 3.31  | 0        | 4.7   | 0        | 4.14  | 0        | 4.21  | 0        | 4.28  | 0                 |
| Total | 222      | Total | 218      | Total | 192      | Total | 174      | Total | 161               |



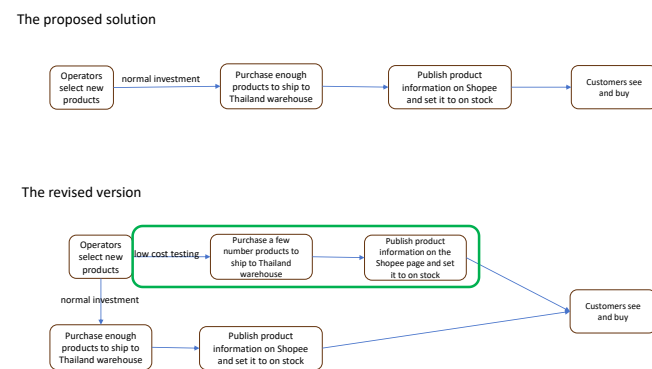
**Figure 8.** Warehouse Return Quantity

### For Q5: The item customer purchased is in stock



**Figure 9. Operation process 1**

Through interviews with store operators, we learned that in the original operation process, many products would choose to be sold in advance to reduce financial pressure and risks, but this method often loses a lot of potential customers. Therefore, we proposed a new operation plan to cancel the pre-sale of products. As shown in Figure 8, after further discussion with the company manager, he told us that although this method is easier to get more customers, it has huge financial risks. In view of the manager's concerns, we proposed an adjustment plan, as shown in Figure 9. For the previously pre-sold goods, we first prepare a small amount of stock (less than 5), and then adjust the product to be on sale. Using this method to test the popularity of the product is easier to improve customer satisfaction and thus increase sales, while allowing the company to bear relatively small risks.



**Figure 10. Operation process 2**

After proposing the adjustment plan, we quickly selected a product that was originally prepared for pre-sale. We first spent half a month preparing 5 pieces of goods for this product, and then created two product links, one link for pre-sale and one link for on-sale. The two links were the same in other content. After a month of data comparison, we found that the link for the on-sale product received 18 likes and 5 purchases, while the pre-sale link only received 3 likes and 0 purchases. This positively proved the effectiveness of our adjustment plan. We will conduct more tests based on the new plan in the future, and apply AAR to our adjustment process, hoping to achieve good results.

### CONCLUSION

This study highlights the importance of logistics efficiency and inventory management in improving customer satisfaction in Thailand's cross-border e-commerce market. By addressing key pain points through a combination of data analysis and business process optimization, the proposed solutions offer a practical framework for e-commerce retailers. While limitations exist, the findings provide a foundation for future research on service quality in digital marketplaces. Continued efforts in refining supply chain strategies and understanding evolving consumer expectations will be critical for sustaining growth in Thailand's e-commerce sector.

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