

## **[Develop a recommendation system and analyze customer behavior patterns: Company Z]**

The business goal was to analyze the customer needs and characteristics of women's clothing shopping malls based on user activities and improve the existing recommendation system. It also sought to provide the planner, marketer, or decision maker with the description board information to intuitively understand the data. First, by checking the preferred women's clothing shopping mall and preferred style, it was induced to up-sell by recommending shopping malls or products (e-mail or after use) in the process of using the service. Second, by analyzing the residence time, the customer's behavioral pattern was analyzed to capture users leaving without purchasing. The time of residence was significantly different, with non-purchase (average 611) and purchase (average 2280). However, there was no additional analysis due to the project period, and it was concluded that upselling could be induced through analysis depending on which channel customers used or which advertisements flowed in to stay on the website/app for a long time and purchase products.

In addition, the cause of the decrease in the efficiency of the existing recommendation system was identified in two aspects and improved. First, the existing model recommended products only to non-purchased customers with demographic information, but most of them were non-purchased customers without actual information. Therefore, gender and age were predicted based on their behavioral history, that is, click history, and the target group was predicted and defined so that self-grouping was possible. Second, the recommendation criteria were changed from considering the buyer's overall shopping history to the recent click history by season and purchase time according to product characteristics. As a result of conducting the A/B test, the conversion rate improved by about 0.5% in the new model. The introduction of the recommendation model developed this time has been an important driver of sales growth, and personally, it has been a valuable opportunity to find factors for improving application performance and to unearth my interest in future recommendation systems and personalization topics.