M.Video-Eldorado applies big data to assortment in-store

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M.Video-Eldorado Group, Russia's leading e-commerce and consumer electronics retailer (MOEX: MVID), has automated its store assortment planning based on data mining. The Company uses AI to analyze consumer behavior during product selection and maintain an optimal range on the shelves to meet the needs of different customer groups. As part of a pilot project spanning more than 100 towns and cities, AI algorithms helped improve sales in tested categories by up to 3.5% merely by adjusting the assortment.

M.Video-Eldorado Group has developed and deployed an MVP (minimum viable product) for the automation of store assortment planning. As part of its hybrid model development, the Company analyzes and leverages consumers' product selection strategy online to improve offline customer experience.

The solution is based on in-depth analytics. It makes use of data on sales and consumer behavior (query sessions, browsing and comparison history) and integrates KPIs. After processing all the available information, the AI assistant provides recommendations to sales managers working with the assortment on shelf stacking in each store section so as to make the best use of the limited space.

For example, take a customer who is looking at and comparing several TV models with the same screen size, resolution and features (an HDMI port, voice control, Wi-Fi connection). It can be safely assumed that these SKUs meet this customer's needs. The AI helps identify and satisfy these needs without overstocking similar items, instead filling the shelves with broad-appeal goods that cover most people's needs.

Oleg Muraviev, Commercial Director at M.Video-Eldorado Group:

> *"As part of our strategy to double the Group's GMV, we are rethinking the fundamental principles of retail and its internal and external processes. We are running a large-scale transformation in commerce and other areas, which includes reducing manual operations, implementing digital products, and grounding our decisions in reliable data analysis. As much as 85% of the Group's customers opt for offline stores to choose and buy their electronics, which means the purchase decision occurs right by the shelf. This makes it important for each customer to be able to find what they are looking for and feel confident about their choice. To achieve that, we use data mining and mathematical algorithms."*

In the course of piloting, the AI model built assortment matrices for several product categories (headphones, kettles, and washing machines) on its own and proved to be effective. M.Video had developed an offline A/B testing method that revealed a significant sales increase of up to 3.5% in the pilot's categories compared to a control group of similar stores. The Company has already started rolling out the assortment planning solution and currently uses statistical algorithms to manage one third of its stores' product range (smartphones, digital devices and accessories, refrigerators, and small kitchen appliances). It plans to fully automate the process by the end of 2021.

Automated assortment planning consists of two stages. First, the AI model develops a tree of customer needs. It analyzes user sessions and clusters products based on the similarity of browsing and comparison histories (in other words, it identifies interchangeable models). The needs are then fed to an optimizer – an algorithm that manages the store assortment. It forms a list of SKUs for each product category and customer need with a view to maximizing sales turnover, margins and ticket numbers, while also factoring in the products' uniqueness within the matrix. All parameters are adjustable and can be easily adapted to new market conditions and changes in sales strategies for individual product categories. Moreover, the optimizer also takes into account the intensity and specifics of demand in different stores, as the AI model is loaded with around 20 store types featuring different assortment planning patterns for each.

Maxim Nikolaev, Head of Assortment Planning at M.Video-Eldorado:

"Previously, our sales managers had to manually sift through products to fill the shelf with the best picks based on sales results, market research, manufacturer data, and their own experience. However, the market has grown significantly over the past five years. Now, the Group's own and partner product ranges exceed 150,000 SKUs, while a store's selling space can accommodate just 5,000–7,000 SKUs. Which models do we display to give our customers an opportunity to view and test what truly interests them? This is where machine algorithms come in. Delegating certain functions to them helps improve retail sales and efficiency while also freeing up expert and manager resources that can now go towards a deeper dive into market trends, new products, and comprehensive development of assortment. On top of that, it is a win-win solution in terms of the interaction between the AI model and human experts: the model provides recommendations on assortment planning in line with customer needs, and the employee approves them or makes adjustments based on their knowledge and experience."

About the Group

M.Video-Eldorado Group (PJSC M.video) is a leading Russian e-commerce and consumer electronics retailer that unites the M.Video and Eldorado brands. The Group's GMV exceeded RUB 500 billion including VAT at the end of 2020.

As of March 31, 2021, the Group had stores across nearly 300 Russian cities, with 545 and 553 stores under the M.Video and Eldorado brands, respectively. Total floor space was 2,020 thousand square meters.

M.Video-Eldorado Group is Russia's only publicly listed consumer electronics retailer. The Company's shares are currently traded on Moscow Exchange (ticker: MVID), with a 24% free float. Said Gutseriev directly or indirectly controls 60% of the share capital of M.video PJSC, 15% is held by Media-Saturn-Holding GmbH and another 1% is held by MVM LLC, a 100% subsidiary of M.video PJSC.

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