Alibris Chooses Simularity to Power Product Recommendations

Alibris is an online marketplace for independent sellers of new and used books, music, and movies, as well as rare and collectible titles. With a database of more than 100 million items from thousands of sellers worldwide, Alibris has a huge inventory.

Testing revealed that recommendations were hugely effective at increasing sales, but Alibris’s antiquated recommendations system was straining under the weight of all their data.

“We have an extremely broad and diverse inventory, so helping customers find relevant products with a more personalized shopping experience is both challenging and essential,” said Casey Carey, Vice President of Marketing for Monsoon Commerce and General Manager for Alibris Marketplace Services.

Alibris’s Big Data Challenge

Alibris’s homegrown recommendation system was quite good — it beat a commercial recommendation engine in A/B tests on Alibris several years ago. But the algorithms hadn’t been updated in years; it took two full days to compute the set of recommendations used on the site; and the data the recommendations are based on keeps growing, and thus so did the time it took to calculate them. Because the process took so long, fresh recommendations were created just once every 3 months.

Alibris had an aging, homegrown recommendation system that needed to be revamped.

The challenge in finding a replacement was Alibris’s vast inventory. Alibris has 11 million unique “works” in their catalog. Alibris’s full historic data includes more than 45 million purchase-related actions. There was a relatively small amount of information on each item, creating a situation of data sparsity. In this case, all the data needs to be used to get the best recommendations.

Simularity Costs 80% Less Than Other Solutions

Most off-the-shelf recommender systems just don’t handle this volume of data well, or they require substantial investments to do so. Open source options like Mahout and Hadoop require an investment in training.
development, deployment, and ongoing maintenance and support of a complex and expensive system of multiple cloud-based servers.

Alibris wanted to update their recommendation system to get faster, better, and fresher recommendations. They also were searching for a fast, flexible, and cost-effective solution that could handle their big data while minimizing the impact on their development and IT teams.

Taking all these factors into account, Simularity’s Total Cost of Ownership was up to 80% less that the cost of comparable solutions.

It was easy to transform Alibris’s data from several different sources into Simularity’s flexible data representation.

Simularity’s logic-programming layer was used to implement custom business rules for Alibris, such as only recommending items with images. It was also used to output Alibris’s new recommendations in the exact same format used by their existing systems, so that integrating with Alibris’s website and email systems was completely seamless.

Simularity has a highly compressed data representation format, and it makes maximum use of multiple cores, so Alibris was able to use the same server they had been using for their legacy system to run the new Simularity implementation.

**Alibris Gets Everything They Hoped For**

Simularity’s solution proved to meet all of Alibris’s objectives:

- Integration took just a few days, minimizing impact to technical teams.
- The technology was able to run on inexpensive hardware Alibris already had.
- Alibris was able to upgrade their product recommendation calculations from the cosine similarity metric to the log-likelihood ratio, a more effective algorithm.
- Recommendations for the entire inventory were computed in a couple of hours, as opposed to a couple of days, resulting in a more engaging user experience.
- Simularity’s recommendations were more effective than the legacy ones.
- No new staff, additional training, additional hardware, or cloud solutions were needed.

**Simularity Helps Alibris Grow Their Business**

We performed A/B tests on the live Alibris site to make sure that the new recommendations performed at least as good as the legacy system. The new Simularity recommendations produced these compelling results:

“Simularity’s recommendations proved to drive significant, incremental revenue in our on-site testing and marketing emails.

Customer engagement has increased, integration was fast and easy, and we now generate better recommendations, much faster.”

– Casey Carey, General Manager for Alibris
Simularity Can Create A Competitive Advantage For You, Too
Contact us at info@simularity.com or 415-819-5731 to learn more.