

Pressemitteilung

Wien, 22.12.2021

INNOVATIVE TOOLS FOR CONSUMER PROTECTION

AIT data scientists make an important contribution to more transparency, security and fairness on large online marketplaces

The Austrian Chamber of Labor (AK) has used more than 500,000 product and price data on Amazon.de to investigate the mechanisms that influence the pricing and offers of its own products and those of third-party retailers on the online marketplace. A new study commissioned by the AK from the Austrian Institute for Applied Telecommunications (ÖIAT) and the Center for Digital Safety and Security at the AIT Austrian Institute of Technology shows the rules by which Amazon's online marketplace operates.

Amazon is by far the largest online retailer in the world. On its online marketplace, the U.S. company not only trades products in its own name, but at the same time many third-party retailers also offer their goods via the Amazon platform. Whether Amazon is exploiting its market power to its advantage is the current subject of observation by the Chamber of Labor.

The algorithms that Amazon uses, for example, to rank offers, are a well-guarded trade secret. Data experts from ÖIAT and AIT conducted a data-based survey of detailed characteristics of search results and pricing for online customers on Amazon.de to find out which mechanisms influence pricing and product offerings as well as the visibility of online retailers. This included the origin of third-party retailers, the influence of advertising and the different methods of customer loyalty, the role of private labels, coupons, limited offers and much more.

Systematic investigation of the amazon market place

While the ÖIAT concentrated on questions of the work situation, legal issues and consumer protection, AIT data scientists carried out an extensive collection and analysis of data. The AIT experts analyzed typical search processes of simulated Amazon customers. Between February and April 2021, more than 525,000 product and price data and more than one million data points were automatically collected on Amazon.de. These data were examined accordingly and analyzed using various methods - the total size of the measurement results and the examined data volume was around 172 GB. This enabled the Amazon marketplace to be broken down into its various dimensions and evaluated.

Innovative tools for consumer protection

For a number of years, AIT has been conducting a special research focus with a focus on the subject of consumer protection relating to the protection of online customers from cyber crime and the protection of privacy, and also maintains strategic collaborations with partners such as the

ÖIAT. In this way, a very high level of competence in this sensitive area has already been built up in an international comparison at the Austrian location.

In 2019, the “preis.wert” project funded by the Internet Privatstiftung Austria (IPA) developed tools for the technology-based analysis of so-called personnel and dynamic pricing. With the help of a specially designed web crawler, local, time-dependent and device-related pricing practices in online retail can be identified and made transparent for various target groups.

In the follow-up project PRIMMING (“Monitoring of price discrimination in personalized pricing for e-commerce through machine-based learning”), which was funded in the BMK’s FEMtech program “Talents”, data-based discriminatory pricing in e-commerce was made using methods of artificial intelligence investigated in order to protect consumers from unfair prices on the Internet and also to be able to take measures against gender disadvantages, for example. This now enables organizations in the consumer protection area to systematically monitor prices.

Likewise, as part of various research projects, such as the SINBAD project funded by the BMLRT in the KIRAS security research program, the Fake Shop Detector (www.fakeshop.at) has already been developed as an important special tool to protect online customers from fraud to be protected by fake shops.

Structures change quickly and dynamically

The results of the current project illustrate how the ranking of search results and the mechanisms of pricing are controlled by Amazon - with the structure (functions, products, additional cost display, etc.) changing very dynamically and quickly. For example, products that are sold by Amazon as a retailer are systematically ranked better in many product categories than offers from third-party retailers. The products linked to Amazon's “Prime” customer loyalty program make up a large proportion of the search results and are systematically ranked better than others. Another result of the analysis is that roughly every third search result is sponsored. So it pays off to look for cheaper dealers.

It was also shown that those who buy on Amazon.de are mostly buying products from third parties: Specifically, two thirds of all sellers are not Amazon itself, but external retailers. In many cases, it is not immediately apparent to consumers in which country a seller is based. Chinese traders are clearly number one; the share of companies based in Austria is only 1.8 percent of all search results in this survey.

AIT excellence in data science

The special know-how of the AIT experts as well as the specific research focus in the AIT Center for Digital Safety & Security form an important basis for ensuring long-term security for online consumers in Austria against abuse. This also makes an important contribution to supporting Austrian online retail in global competition. These findings are therefore not only highly relevant for consumers, but can also be used as a basis for further considerations on efficient and effective regulation, as they are currently being discussed at the EU level and in many countries. “With our

excellence in the area of data science, we ensure more transparency on large online marketplaces for consumers and thus make a significant contribution to increasing security and fairness in online trading. We are thus making an important contribution to the success of Austrian providers in global competition, ”summarizes Helmut Leopold, Head of the Center for Digital Safety & Security.

Link to study:

https://www.arbeiterkammer.at/beratung/konsument/EinkaufundRecht/Studie_Amazon_2021.pdf

Press contact:

Mag. (FH) Michael W. Mürling

Marketing and Communications

AIT Austrian Institute of Technology

Center for Digital Safety & Security

T +43 (0)664 235 17 47

michael.muerling@ait.ac.at | www.ait.ac.at

Mag. Michael H. Hlava

Head of Corporate and Marketing Communications

AIT Austrian Institute of Technology

T +43 (0)50550-4014

michael.hlava@ait.ac.at | www.ait.ac.at