

258. PRICING ALGORITHMS IN ONLINE TRADING

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This paper examines the use of pricing algorithms in online trading. It analyses how automated systems determine prices, the benefits they bring to businesses, and the potential risks such as price discrimination and algorithmic collusion. The paper highlights the importance of transparency and regulation in algorithmic pricing systems.

Online trading platforms are increasingly using automated pricing algorithms to determine the prices of products and services. These algorithms analyze large amounts of information, including consumer demand, competitors' prices, market trends, and user behavior. Many large e-commerce companies, such as Amazon, use algorithmic pricing to respond faster to market changes and improve their overall profitability.

One of the most common forms of algorithmic pricing is dynamic pricing. This approach allows companies to automatically adjust prices depending on market conditions. For example, when demand for a product increases significantly, the algorithm may raise the price. Conversely, if demand decreases or competitors lower their prices, the system may reduce the price to stay competitive.

However, the use of pricing algorithms also creates several important concerns. One major issue is price discrimination. Modern algorithms can analyze personal data and customer behavior, enabling companies to offer different prices to different users. For instance, a customer who regularly purchases expensive products may be shown a higher price than another user who is viewing the same item for the first time. Although this strategy may increase company profits, many consumers consider it unfair, which can reduce trust in online marketplaces [1].

Another significant concern is algorithmic collusion. When several companies use automated pricing systems, their algorithms may unintentionally start reacting to each other in ways that keep prices higher than they would be in a competitive market. This outcome can resemble traditional price-fixing and raises serious antitrust and competition-law challenges [2].

Because of these risks, researchers and policymakers emphasize the importance of transparency in algorithmic pricing systems. Companies should notify users when dynamic pricing is applied and clearly explain the main factors that influence price changes. At the same time, governments and regulators must develop legal frameworks capable of addressing the challenges created by algorithmic decision-making in digital markets. International cooperation, including the work of organizations such as the OECD, plays an important role in creating consistent regulatory standards.

To reduce potential harms, both companies and regulators should introduce stronger oversight mechanisms. Consumer protections such as opt-outs from personalized pricing, price-equality guarantees, and accessible dispute mechanisms would also improve fairness and accountability. In addition, independent audits of pricing algorithms and clearer disclosure of pricing practices could help increase transparency. Technical monitoring tools may also help detect unusual pricing patterns and prevent potential anti-competitive behavior.

Public awareness and interdisciplinary research are also vital. Economists, computer scientists, policymakers, and consumer advocates should collaborate on empirical studies that quantify harms, test mitigation techniques (for example, privacy-preserving personalization and explainable models), and develop best-practice design patterns.

In conclusion, algorithmic pricing has become a central feature of modern digital commerce. It enables firms to react promptly to market shifts and to optimize revenue, but without adequate transparency and regulation it can exacerbate inequality, weaken competition, and erode consumer trust. A comprehensive approach-combining technical safeguards, legal frameworks, and consumer protections – is necessary to preserve innovation while ensuring fair and trustworthy markets.

References:

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