

emerge if competitors use pricing algorithms informed by strategies that do not converge.

How can the competition law framework treat price discrimination fostered by personalised, dynamic pricing?

Technology leads to increased product heterogeneity and product differentiation. In these markets, pricing algorithms facilitate dynamic personalised pricing. Thus, companies can benefit from asymmetric information and set prices based on insights consumers' willingness to pay, thereby getting very close to first degree price discrimination. Our speakers discussed how this new form of price discrimination may affect competition as well as equity. There was disagreement as to whether first degree price discrimination is welcome or concerning.

Whether or not we think algorithmic price discrimination damages competition depends on the extent to which we believe in the ability of markets to correct themselves. On the one hand, this enhanced possibility to discriminate prices may lead to extremely dynamic markets. On the other hand, we might see monopolistic competition emerge, if competitive bottlenecks emerge, for instance in advertising at the individual consumer level.

At the same time, algorithmic price discrimination might have both distributional and political consequences.

For instance, so-called digital butlers that help us shop, get news and entertainment etc. can gather extensive user information and thereby thoroughly customise their offer. This has an implication on the market for ideas and also for democracy itself when they advance to become users' main source of information.

Algorithms might also be programmed to compete for the wealthiest consumers by giving those a larger initial discount, thereby having great redistributive implications. Or they may in general focus more on the most price elastic consumers. Benefiting from an information asymmetry (i.e. consumers lack of awareness and lack of tools to respond), algorithmic pricing might also raise questions of fairness.

Should we then be concerned about customised pricing?

Does the kind of perfect price discrimination allowed by algorithmic pricing increase economic welfare?

All speakers agreed that, whether price differentiation has a positive or negative effect requires a case by case analysis, but economic theory stipulates that perfect price discrimination can maximise total economic welfare as the sum of producer and consumer welfare. For the purpose of competition law however, the European Commission focuses on a *consumer* welfare standard. One rationale for this is that consumers have a lesser ability than firms to organize themselves and be represented.

Should fairness and equity be part of the competition assessment?

Another topic was whether inequity considerations should be part of the competition assessment. The speakers noted that it would be difficult for a number of reasons. First, it would be difficult to reach a consensus about the political question of what is considered fair. Economic tools can help – by identifying winners and losers of certain business practices or policy interventions – yet economics is only part of the relevant viewpoints. Second, prohibiting price discrimination altogether would exclude certain consumers from the market. Third, a fairness assessment would add unnecessary complexity to an already complex competition enforcement process. This complexity is exacerbated by the fact that personalisation does not only concern prices but also product quality and other parameters alike. Hence, adding fairness considerations would make it more difficult for undertakings to know whether their conduct complies with competition rules.

Can consumers strike back?

A point debated is whether the effect of algorithmic pricing on consumers is relative, stressing that through online retail, and today more than ever consumers have large product choice and an unprecedented ability to compare prices. This in turns spurs competition and drives prices down. Firms may be advancing the sophistication of their pricing as a response to consumer pressure, empowered by broad choice online.

Some argued that consumers are savvy and active and thus they limit the ability of companies to raise prices,

for instance by becoming ‘algorithmic consumers’ through the use of devices that help them shop. Moreover, consumers’ perceived unfairness of algorithmic pricing can constitute a strong policing force for company behaviour.

What do these changes mean for competition enforcement?

There was a general agreement that change is happening, it is happening faster and it affects the way companies compete, however the speakers did not agree on the exact implications digitisation would have for competition.

While some speakers questioned whether competition authorities are sufficiently well equipped to deal with these issues, others considered there is no need to change competition rules given they are flexible enough to tackle the most problematic aspects. In this regard collusion can be assessed under art. 101 TFEU while certain individual pricing strategies can be assessed under 102 (a) TFEU. Moreover, some of the issues discussed could be solved by paying close attention as to whether market definitions are up to date and reflect the reality and dimensions of pricing constraints – which may imply defining narrower markets.

In addition, according to some discussants consumer protection regulation can also play a role, particularly regarding price discrimination where firms may be e.g. forced to disclose to consumers whether the firm engages in differentiated pricing. Further consumer empowerment may also be part of the response to these challenges.

2. A broader view on price differentiation from regulatory policy

Price discrimination is not a new kid on the block. Competition and regulatory economists have long analysed this matter while informing the decision on how much price flexibility to grant to a regulated incumbent or how to evaluate policy proposals that interfere with firms’ pricing.

Ramsey pricing and two-sided markets

Two specific challenges that digital industries face regarding price differentiation revolve around price rules such as Ramsey pricing (price discrimination based on

buyers’ differing price elasticities) and two-sided market pricing (i.e. by customer group, with groups linked by network effects).

One view is that price discrimination has been generally accepted by policy makers in industries with high investment fixed costs. Therein, uniform retail prices do not allow to recover investments, while differentiated prices maximise welfare. In addition, when these infrastructures are subject to third party access obligations, a two part price can be the best option.

The second challenge concerned two-sided markets, when price differentiation can be efficient because it internalises indirect network effects reflecting differentiated externalities and elasticities. Furthermore, network effects could theoretically be maximised in a monopoly, so in certain circumstances agreements between competitors on price caps could be efficient. These reflections open the question: what can competition enforcement in the area of algorithmic pricing infer from the regulatory economics treatment and monitored acceptance of price discrimination in network industries?

Geoblocking

In the context of the proposed EU regulation regarding geoblocking, certain cases when geoblocking could be justified were discussed.

The fact that the internal market is still fragmented was highlighted. 28 different consumer and payment rules, different languages, cultures and tastes, coupled with significant delivery costs explain that most online retailers operate in a limited number of markets within the EU. In this context, pricing becomes very important. Moreover, compliance with the proposed regulation will be costly and cumbersome for online retailers.

In other industries the effect of geoblocking rules on welfare may be unclear as they may ultimately negatively affect the investment in new products (e.g. media content).