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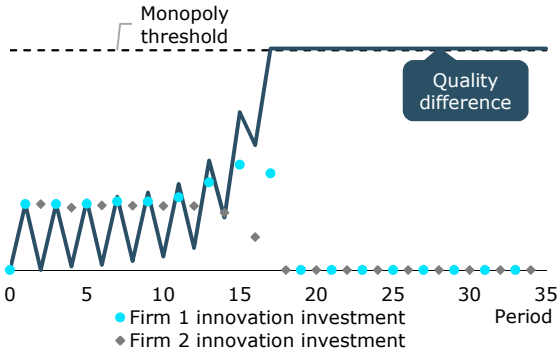
Big Data is becoming an important and valuable asset in many markets. At this year's first Konkurrenceøkonomisk Forum, Christoph Schottmüller argued that data-driven markets tend to "tip" into monopolies. This raises an obvious question: Should anti-trust authorities intervene?

At this year's first Konkurrenceøkonomisk Forum, Christoph Schotmüller from Copenhagen University presented his paper Prüfer & Schottmüller (2017): "Competing with Big Data". In the paper, the authors investigate so-called data-driven markets.

The authors show that data-driven markets tend to tip into monopolies in the long run. A company that initially manages to capture the majority of the market will be able to harness its superior access to historical consumer data (which results from initial market share) to generate innovation at a much lower cost than competing firms. This gives them a competitive advantage going forward and over time, the dominant firm can build an insurmountable quality advantage, see Figure 1.

In the monopoly outcome, innovation rates will be low, because the monopolist no longer needs to innovate to keep potential competitors out of the market. The need for historical consumer data (i.e. past market dominance) will serve as a natural barrier to entry.

Figure 1 Impediment of data-driven innovation



Note: In the long run, the market tips in favour of Firm 1. As the monopolist, firm 1 chooses not to innovate.

Source: Prüfer & Christoph Schottmüller (2017): "Competing with Big Data", working paper.

Because the monopolist has little incentive to invest in improving the quality of the product, consumers are then worse off in the long run than in a competitive market. This is the authors' theory of harm.

Margrethe Vestager, the European Commissioner for Competition, has raised similar concerns. In a speech given on the 18th of January 2016, she argued:

"[...] if just a few companies control the data you need to satisfy customers and cut costs, that could give them the power to drive their rivals out of the market. And with less competition, there's a risk that there won't be enough incentive for companies to keep using big data to serve customers better. If a company's use of data is so bad for competition that it outweighs the benefits, we may have to step in to restore a level playing field."

The question then becomes whether this calls for intervention by antitrust authorities.

Do the investment strategies resemble predatory pricing?

Under predatory pricing, the dominant firm sets a very low price with the intention of driving competitors out of the market. Initially, consumers benefit from this pricing strategy, but in the long run, they are worse off because they are left with a monopolist who will raise prices as soon as their competitors have been eliminated.

Such a pricing strategy could be seen as similar to the investment strategy initially pursued in data-driven markets described in the model by Prüfer & Schottmüller.

In the model, the dominant firm invests a lot in the initial periods to drive up innovation with the intention of capturing the market. This benefits consumers because innovation implies that the quality of the product improves. After tipping, however, consumers are worse off, because the monopolist no longer innovates, or innovates only just enough to keep competitors out of the market.

Though there are similarities to predatory pricing, it might still be a bit of a stretch to think that anti-trust authorities will use the theory of predatory pricing to restrain the behaviour of dominant data-driven firms.

Is data an essential facility?

An essential facility refers to a non-replicable and necessary input of production for a given product/service. The input can be something as simple as a spare part for a diesel engine. But it could also be big data, if such data is costly and time-consuming to replicate.

Anti-trust authorities will normally interfere if a dominant firm refuses to supply an essential facility in an attempt to prevent entry into the market, effectively limiting competition. So will anti-trust authorities also step in when it comes to data, if data is also an essential facility to which competitors should be granted access? Is regulation required?

In competition policy, the debate has primarily focused on the trade-off between ex ante and ex post incentives. On the one hand, mandating a dominant firm to share data stimulates competition, thus promoting allocative (ex post) incentives. On the other hand, mandatory data sharing may reduce the return on investment and thus decrease ex ante incentives to invest in data-driven products. In a balancing test in the Microsoft case, the Commission concluded that the possible negative impact on Microsoft's ex ante incentives were outweighed by the positive impact on innovation for the industry as a whole.

It still remains unclear how anti-trust authorities can and will adjust their toolsets to fit a world of Big Data. At Copenhagen Economics competition policy is a key issue and we look forward to following the development.