



Information About Differences Ultimately Leads to Profit

When firms participate in industry classifications, their product may turn out to be better or worse than that of their competitors. Either way, the bottom line is boosted.

In 1855, Napoleon III wanted to make the Exposition Universelle an event to rival London's Great Exhibition. In addition to building an exhibition space to dwarf Crystal Palace, the last monarch of France asked for a ranking of Bordeaux's most expensive (*ergo* best) wines. This established the different strata of châteaux, such as premier cru, deuxième cru and so on. With the Bordeaux Classification, we see an early example of industry classification that still reverberates today.

Napoleon III's goal was to showcase the best French wine at his version of a world fair. But was the classification also in the best interest of the vineyards? This is a relevant question today because similar classifications exist in many industries. Aside from classifications, rankings, industry competitions, trade shows and expert reviews can all be seen as mechanisms that allow consumers to easily compare different products. Are these mechanisms beneficial to an industry or individual firms?

In a recent working paper, "**The value of public information in vertically differentiated markets**", Thomas Gall (University of Southampton) and I used game theory to tackle this question. Our starting point is an old (but often forgotten) piece of economic theory: Differentiation increases profits. Here, we looked at vertical differentiation, which refers to the perceived quality differences

between products in the same market. For example, two red wines from the same region are vertically differentiated if only one of them is perceived to be high quality. Of course, this also applies to restaurants, phones, TVs, and so on.

The principle that differentiation increases profits applies to vertical differentiation as well. Generally, when consumers have a choice between two products that seem to be essentially the same, they choose the cheaper one. As a consequence, two firms selling products perceived as very similar will engage in fierce price competition, thus driving down profits. For example, two Japanese restaurants on the same street, both proposing high-quality, expensive sushi will most likely make a loss because they would be locked in a price war that would endanger any profits.

But if one of the products is perceived as worse than the other, then the two firms can focus on different segments of the market: One will serve those who seriously value quality (and charge a high price); the other will serve those who may not value quality in the same way (and charge a lower price). For example, one of the two Japanese restaurants may start proposing average-quality (but cheaper) sushi, targeting workers on their lunch break. The other restaurant can continue to focus on the high-end segment of the market. The bottom line is that a firm

may be better off having a worse product, if this increases the vertical distance from their competitors.

For better or worse

Our paper finds that generating public information about the quality of products (via industry classifications, competitions, ratings and reviews, etc.) leads to more vertical differentiation and hence higher profits.

Say a firm submits its product to an industry competition. This product may turn out to be the winner, in which case, obviously, this firm's profits will increase. But it could also turn out to be the worst of the lot. In this case, this firm may still fare well if its product is revealed to be sufficiently different from its competitors, i.e. if vertical differentiation increases. We show mathematically that this logic extends to all mechanisms (trade shows, rankings, competition, etc.) that produce public information about a product. This happens both when the information is about how a given product stands with respect to others (as in a competition or a ranking) and when this information is just about the quality of a product on its own (as in a classification system, a public quality testing system or an expert review).

Two interesting observations follow. First, generating information about a product is beneficial both to the sponsoring firm and its competitors simply because increased vertical differentiation increases profits for all firms in the market. This explains why many of these information-gathering tools – trade shows, competitions, etc. – are sponsored by industry bodies, so to induce more firms to participate and benefit the industry overall.

Second, a firm can always increase vertical differentiation via quality degradation, that is, by visibly reducing the quality of its product. For example, suppose Vineyard A and Vineyard B have incredibly similar wines – they are scrambling for the same consumers and hence make no profits. Vineyard A may decide to start using fewer grapes and more water, resulting in a poorer quality wine (but cheaper) and then sell it to different consumers than Vineyard B. In our paper, we show that information generation achieves vertical differentiation while avoiding quality degradation. Returning to our vineyards, if an industry competition reveals which wine is better, then Vineyard A can rely on this competition to achieve vertical differentiation, without making its own wine worse. Producing information is a better alternative for vertical differentiation.

Going forward: too much information?

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There is, however, a dark side to the story. When vertical differentiation increases, consumers can better choose the product closer to their taste. But there are cases in which increased vertical differentiation transforms both firms in local monopolies. By capturing a segment of the market, they can charge consumers a hefty markup. Theoretically, under certain conditions this negative effect may dominate: Consumers can be made worse off by the presence of a classification system, for example. Although our results are still preliminary, this would suggest that new regulations may be needed to avoid the dark side of classification systems, industry competitions, trade shows and expert reviews.

For a firm, the worst possible outcome is not to discover that its product is bad, but rather to discover that its product is perceived as identical to another one in the market. Generating information about the products on the market is a way to vertically differentiate them. Trade shows, industry classifications and other publicly available information about product differences should be embraced not only by individual firms, but more importantly, by industry bodies.

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