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PRICE OPTIMISATION STRATEGY

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An actual case: the price of laptop micro-computers sold on the Internet

We have set out the number of laptop micro-computers sold on the Internet by price band: this data has been gathered from a website that compares the prices of all the resellers of computer hardware on the web in France (www.i-comparateur.com). The database has 1201 models of laptop computer from 200 to 4712 euros.

It will be noticed that the supply is not in practice evenly spread and that there is strong competitive pressure corresponding to the “psychological” prices in the ranges from 590 to 599 euros, 690 to 699 euros and 790 to 799 euros. By contrast, in price range from 855 to 860 euros there is no supply at all.

The equation in Graph 1 represents the level of supply modelled on a 6 degree polynomial curve, the first part of which has the appearance of a Gaussian curve: the supply points below the curve represent low pressure from the competition, whereas the points above the curve indicate the opposite.

But what price should one adopt if the overriding aim is to avoid competition in this field (avoidance strategy)? In this case, the following constraint must be respected:

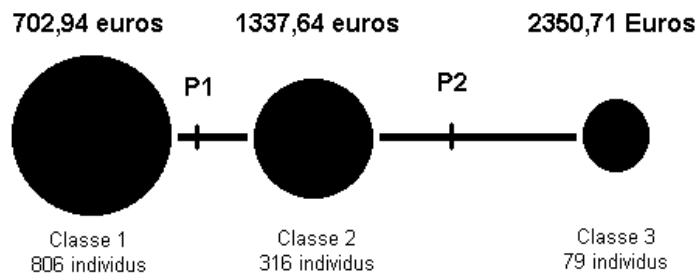
$$\text{Max} [\text{Min}_i | p - P_{Ci} |] \ \& \ \text{Max} [\text{Min}_j | p - P_{Rj} |]$$

By minimising the intra-class variance and maximising the inter-class variance, an ascending hierarchical order gives us an optimised spread in 3 price ranges whose centres are 702.94, 1337.64 and 2350.71 euros taken from 806, 316 and 79 individuals respectively.

If one represents the number of computers on offer as a function of a moveable price range (Graph 2), one sees that the supply is weak at certain intervals and in particular in the [805; 860 euros] and [1400; 1465] brackets, which are well outside the classes previously determined.

Thus it is possible to determine the optimal prices between these classes, being the prices that are furthest removed from the competition and that correspond to the weakest competitive pressure.

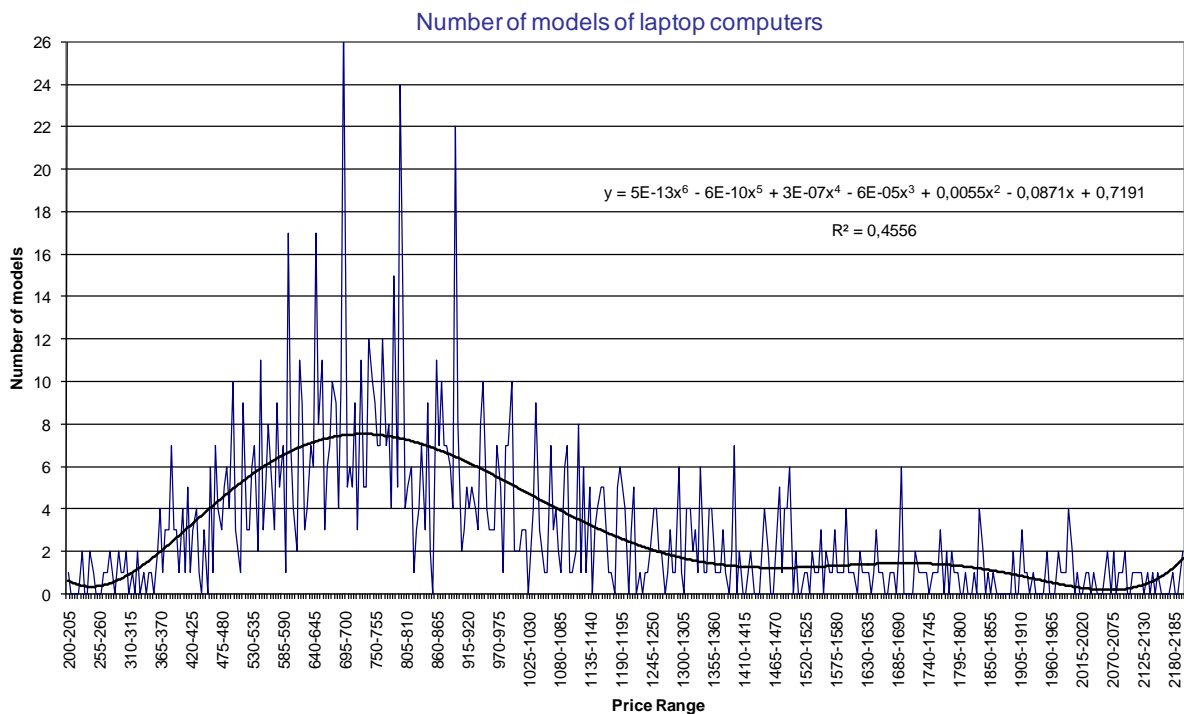
P1, to be chosen from the [805; 860 euros] range and P2 from the [1400; 1465] range are thus the optimal prices where the competition is clearly weakest in terms of the supply of models of laptop computers. These values should correspond to the prices to be set if the specific intention is to launch two new models of computer in these rare price windows. The underlying hypothesis is that demand does not vary suddenly as a function of the price level.



This one-dimensional price optimisation, based solely on studying the spread of supply, takes no account of the different characteristics of the products on offer. This analysis might be useful at the pre-design phase.

In the usual case, where good information is available on the products offered by the competition, it will be possible to form clusters following a similar principle, by the prior factorial analysis of the database containing descriptions of all the products in terms of price, product features, and even distribution and promotion channels.

Graph 1



Graph 2

