



Practice Case 24 (Automobile Producer)

Question and Background Information:

The director of marketing at an automobile manufacturer suggests changing the current design, where two separate keys operate the ignition and the doors to a design where one key operates all lock mechanisms.

How do you think about whether this a good idea or not?

Suggested Sample Response:

The goal of any business including automobiles is profit throughput that can be measured by the Net Present Value impact of the proposed change. For the proposed change to have a positive impact on profit throughput, the change must be a net positive of change in cost structure or product demand weighed against the investment needed to implement the change. An expanding of demand in this case must come from the product meeting customer needs better than the direct competition or substitutes. Customer needs that this product may address are simplicity, security, and cost of ownership (related to security). One should also consider if the improvement is defensible or would be easily copied.

For cost structure, the relative expense of using what is assumed to be the more complex locking mechanism of the ignition on the door and trunk (assumed 5 locks that would be more complex) would have to be weighed against the reduced cost of developing or purchasing separate key and lock mechanisms. As most automobile manufacturers are very large, it is assumed that the simpler locking mechanism needed for the doors could be reused across many product lines or purchased from large parts suppliers who supply the industry as whole and the development cost of a separate locking mechanism would be low. Therefore, the change in cost structure will be driven by the relative cost difference of buying 6 complex locking mechanisms vs. 5 simple locking mechanisms and 1 complex mechanism. It is assumed that a more complex locking mechanism is needed for the ignition. Therefore, the hypothesis is that the net change of cost position is negative. It is also assumed that the market power of buying more complex locking mechanism would not significantly impact the price charged by suppliers or cost basis if developed internally. This hypothesis would be easy to check by looking at the relative cost position of the different locking mechanisms and the discount structure available for mass purchasing the various locking mechanisms.

On the demand generation side, the product would have to create a net positive in demand across the customer needs of simplicity, security, and cost of ownership. The fact that the marketing director suggested this change hints at the fact that customers may demand the increased simplicity of only carrying one key. This does not seem intuitively true as the two keys are almost always carried on the same key ring so the relative improvement to simplicity is probably minimal.

For security, there are two factors to consider, the theft of valuables in the car and the car itself. If more complex locking systems were to improve the security to valuables, then the value of going with the more complex locking system on the doors of the car may be a positive. The assumption,



however, this is not the case as door locks are typically compromised not by picking the lock but by compromising the areas around the lock (i.e. Slim Jim). Also, security systems, which are becoming more common on cars, mute the affect of a more complex locking mechanism, as the key lock mechanism becomes the non-primary mode of defense. I do not see how moving to one key would impact the chance of theft of the entire car, as in either case the same locking mechanism would have to be beaten. This also means the cost of ownership, which could have increased if the change of car theft increased due to insurance premiums, would exhibit no affect.

The customer reaction to a single key mechanism could be tested through surveying or product pilots where a sample set of customers are given actual cars with one key and asked to gauge their reaction. Or larger regional pilots could be run and the change in demand affect measured.

The investment required to implement the change of eliminating a separate key and lock for the doors and ignition is assumed to be minimal as key locking mechanisms are fairly standardized and the ignition key lock, which is probably more complex, could be transferred to the doors and trunk with minimal amount of rework of the parts assembly infrastructure for building the auto. The primary investment cost would then be the cost of piloting or surveying for the increase in customer demand by implementing the change. Surveying and piloting costs can be significant, but it is assumed a cheaper survey would suffice in this case to gauge demand so investment costs would be minimal.

Three final possible points to consider on demand generation. One, an increase in demand is necessary but not sufficient to improve profit throughput, as the company also needs to be able to meet the new demand generated. As auto manufactures almost always have an excess of capacity, this is not an issue. Two, even if this change was beneficial it could be easily copied by competitors and it is assumed that the change would not provide any lasting brand advantage in the customers mind or raise the demand of the sector as a whole. Therefore, in the long run, the cost reduction benefits would override the decision to go forward and we have already argued the affect would be negative. A final factor that should be considered is the assumption that the majority of cars sold in the US in the past have included two keys and the two keys have most likely generated a lot of unanticipated use that may be hard to anticipate that might cause customers to reject the change. So, from a customer perspective, I would want to see the demand for this from customers to be strong and the benefits large before implementing a change.

Because it does not appear the proposed change would positively impact cost position or increase demand significantly, the recommendation is against the proposed change. I recommend even against investing to gauge customer demand as the long run benefit would be in cost position and the assumption here is that the affect is negative.

Summary Comments

This candidate starts with a framework and works through to a hypothesis and how the answer might be tested. All the customer factors or cost impact that could be considered are obviously not included, the interviewer should look for a structured presentation that arrives at a hypothesis with ideas how to test and a proposed answer.