Problem Chosen
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### 2020 MCM/ICM Summary Sheet

Team Control Number 2007860

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## 1 Restatement of problems

## 1.1 Background of problems

In the online marketplace it created, Amazon provides customers with an opportunity to rate and review purchases. Individual ratings - called "star ratings" – allow purchasers to express their level of satisfaction with a product using a scale of 1 (low rated, low satisfaction) to 5 (highly rated, high satisfaction). Additionally, customers can submit text-based messages – called "reviews" – that express further opinions and information about the product. Other customers can submit ratings on these reviews as being helpful or not – called a "helpfulness rating" – towards assisting their own product purchasing decision. Companies use these data to gain insights into the markets in which they participate, the timing of that participation, and the potential success of product design feature choices.

#### 1.2 Restatement of problems