We have attempted to use data analytic tools in the past to predict the purchases that customers will make. We have used association to discover relationship between items that individual customers might purchase. With this tool we have found out that if a customer purchases certain items, they are more likely to buy other specific items. We use this information to display items that are frequently bought together. We have also used a random forest approach to try to determine if there are things that we know about our customers that can predict what they will buy and when. Through past analytic initiatives, we have discovered that information such as income and family size provide insights into what customers might be looking for.

These previous analytical methods are helpful but they are not exactly what we need for this initiative based on the data that we currently possess. Association is an inefficient tool because it requires a lot of time input which grows exponentially as the data becomes more complex. Association will also not work for this initiative because not all of our data is categorical, which is what you need to determine the associations. For the random forest modeling, there are currently data limitations due to the limited variables with which we are working.

For this initiative, the 2 possible methods we can use are classification and clustering. Classification is when you assign labels to objects. This method makes sense in this case because the objective is to categorize our customers into the 4 adoption categories of Innovators, Early Adopters, Early Majority, and Late Majority. The other method, clustering, is when you group items by similarity. This fits our situation because customers that are more similar to each other might be more likely to fit into any one specific adoption category. This method also has additional benefits because it is easy to implement and easy to build on. The clustering method would provide a foundation of analysis that we could scale towards future product offerings.