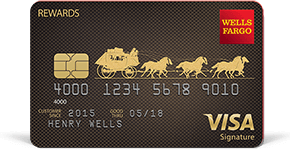
**The Solution**

Credit cards are the tool through which most Americans make their daily purchases. As such, they’re an essential part of personal finance, and beg for a hint of the individuality that defines their user.

When visiting the Wells Fargo website for credit card options, one sees several ‘types’ of cards available, such as the categories of cash back and rewards. This is great as it offers different groups of credit cards to reflect the diversity of Wells Fargo’s customers. From there, one may select one of a few card choices, though such choice is a bit more limited. The few that are listed apply for generalized groups and only offer customer rewards or cash on categories that they may not feel particularly connected with.

For instance, the Wells Fargo Visa Signature Card offers 5x points on gas, grocery, and drugstore net purchases. This is obviously tailored to suit a large audience, and as such, is rather impersonal to the individual credit card holder. A customer may decide on this card because they spend a lot on groceries, and gas, despite not spending significantly at drugstores. This is acceptable, but through data science and innovation, we can design credit cards with reward or cash back plans better suited for a given individual. This will improve the experience for the individual while simultaneously increasing the market demand specifically for Wells Fargo’s credit cards.



**Value to the Customer**

As noted, the tailoring of a credit card to an individual will dramatically improve their experience. However, rather than explain all the details of this statement, the concept is best explained by example.

Consider user John Smith, who has three dogs at home, loves to eat out, and is a bicycle enthusiast. This is reflected in his credit card spending on:

PET, RESTAURANTS, and ENTERTAINMENT.

Imagine if Wells Fargo could design a card to target his specific interests. Now, when John’s spending his money on a new dog toy, he can also enjoy the reward of cash back for his purchase.

Additionally, the number of categories, cash back, or amount of reward points could counteract any loss from removing the standard categories of groceries or retail. This way, John doesn’t feel like he’s missing out by skipping out on a standard credit card.

**Data Usage**

For Wells Fargo to accomplish this feat, it needs access to data. Lots of it. Luckily, they have been collecting information for decades to better understand their users and provide them with a great service. There are two main groups of data that were used to explore the concept of credit card individuality.

First, Wells Fargo needs some basic information about each user, such as their age and what types of accounts they own. This was provided in the first sheet of the excel document, Month end balances. This data can be used to determine which users are similar, as well as predicting information about a given person.

Second, it is essential to have the credit card usage for each Wells Fargo customer. This data is used in almost all the code for the concept.

**The Concept and Code**

The code takes a single input: the user’s ID. This can be entered by a computer, a Wells Fargo employee, or potentially a customer alone.

It begins by displaying a user’s spending habits. How often they’re spending on each category over a period of time (the current model displays data over 6 months). This data is displayed through text and a corresponding bar graph.

From there, the code will use data from the selected user and other available users to determine if they are spending significantly more often than the average user. The current statistical method used is standard deviation, but the code can easily be altered to fit any statistical analysis.

Right now, the code displays if the user spends significantly more than others in AUTO / GAS. Of course, this code can be changed to select any category, or all the available categories. From there, an employee or computer software can design and assign a credit card that matches their spending habits.

Finally, the code also displays what methods of communication the user has a tendency towards when contacting Wells Fargo. If a user’s Contact by Mail value is 0, then they obviously shouldn’t be sent an advertisement or contacted by mail. If they often contact Wells Fargo instead, then a Wells Fargo employee can personally call them and recommend the individualized credit card. This human connection combined with the individuality of the card will be certain to leave a great impression on the user.

If the user doesn’t have a credit card, the program shows if a user has searched the Wells Fargo website for anything related to “Credit”, and displays their history regarding the search. The code can further be developed using randomForest, a coding library for R, to create an individualized card for a user without data for credit card usage. This is done by comparing them to similar users who already have Wells Fargo credit cards.