Relax Inc. user adoption

**Problem**: Identify factors affecting user adoption with Relax Inc. productivity and project management software.

**User adoption**: For a user to be considered as adopted. He or she must login for at least 3 days in a 7-day period, at least once in the data set.

**Approach**: With couple of years of data, we look at the, what factors affect user adoption, either by their sign-up attributes and some behavior patterns.

There are number of attributes that one can think of in a general case scenario. One of the immediate answers that might come to mind is how long the user stays active with the product. But this information is only available after some time has pass since account creation. Nevertheless, this information still useful to either know if being active in the system has good probability of being adopted the product. Or if the definition of being adopted needs to be reconsidered.

Considering this we use two approaches to see what factors are better predictor of user adoption, at the after signup. Secondly, as more information is available does the predictability improves.

**Solution**: Some of the features that we extracted are

* Time when a user sign-up, time of the day (hour) and time of the year (month).
* If people who invited have any influence on them. For example: If inviter is an engaged user will that affect the invitee or if they both belong to same organization and so on.

Using these features, we experimented with couple of different models, with and without the user activity information.

**Results**:

For case where we purely go by initial user attributes, the predictability is low, just above random guess. But when you have information about how long the user has stayed since signing up for the product, the odds improve quite a bit. It then becomes possible to predict the adoption probability. Which means either we need more information about the users at the sign up itself or we need to learn more about them as they interact with the product.

As far the important factors affecting the adoption the top 3 attributes are,

* (opted\_in\_to\_mailing\_list, enabled\_for\_marketing\_drip) If the user has opted into mailing list and if they are on marketing drips. Both have relatively higher importance on all the models tested. In fact, as more information is available about the user, these initial actions are still the best indicators.
* (creationTimeSinceMidnight) Time of the day when the user signs up. This makes sense, an org user, if adopted, will mostly likely sign up during normal office hours. Whereas an individual user will mostly likely signup during free times.
* (isAdopted\_Invited) Another importance feature is if who the inviter is also an engaged user.