# National Diabetes Month Data Challenge

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## Overview:

What are the marketing implications of National Diabetes Month? Do companies serving the diabetes community share more on social media and does that result in greater brand recognition? The following data was extracted from Twitter to see how certain companies spread diabetes information during the month of November.  Below will show the results of 3 insulin pump companies and 3 glucose meter companies.

## Metric:

The goal of Twitter is to share information and interact with users instantaneously. The metrics used for this analysis are company tweets and retweets.  Below is a list of company Twitter followers. Also listed, are the total number of tweets and retweet sent out in the month of November by each company.

*Table 1:*

| Company Name | Followers (1/28/2017) | Followers (12/01/2016) | Followers Change Since November | # of Tweets in November | # of Retweets in November |
|---|---|---|---|---|---|
| **Insulin Pump Companies** | | | | | |
| Tandem Diabetes | 4601 | 4604 | -3 | 37 | 50 |
| MyOmnipod | 645 | 649 | -4 | 48 | 163 |
| Medtronic Diabetes | 23541 | 23562 | -21 | 167 | 193 |
| **Glucose Meter Companies** | | | | | |
| Abbott FreeStyle | 15652 | 15662 | -10 | 152 | 117 |
| OneTouch | 9875 | 9872 | 3 | 19 | 4 |
| Accu-Chek US | 12229 | 12238 | -9 | 127 | 2659 |

* ***Followers*** *means the number of people following the company*

Interestingly enough, not a single company increased its number of followers during the month of November.  In fact, most of the companies lost followers in the following months.  If one of the companies had increased in number during this time frame, a NLP analysis could be used to see if certain key phrases were used to increase numbers.  However, since followers did not increase, we will just look at the data at hand.  It is also worth noting, not a single tweet, for any company, was "favorited" in our time frame.

As seen in Table 1, the number of followers can differ by an order of magnitude.  Therefore, comparing just tweets and retweets alone is not a proper comparison.  A comparison of tweets and retweets per number of followers will be used instead.  This will show which company is more effective utilizing Twitter.
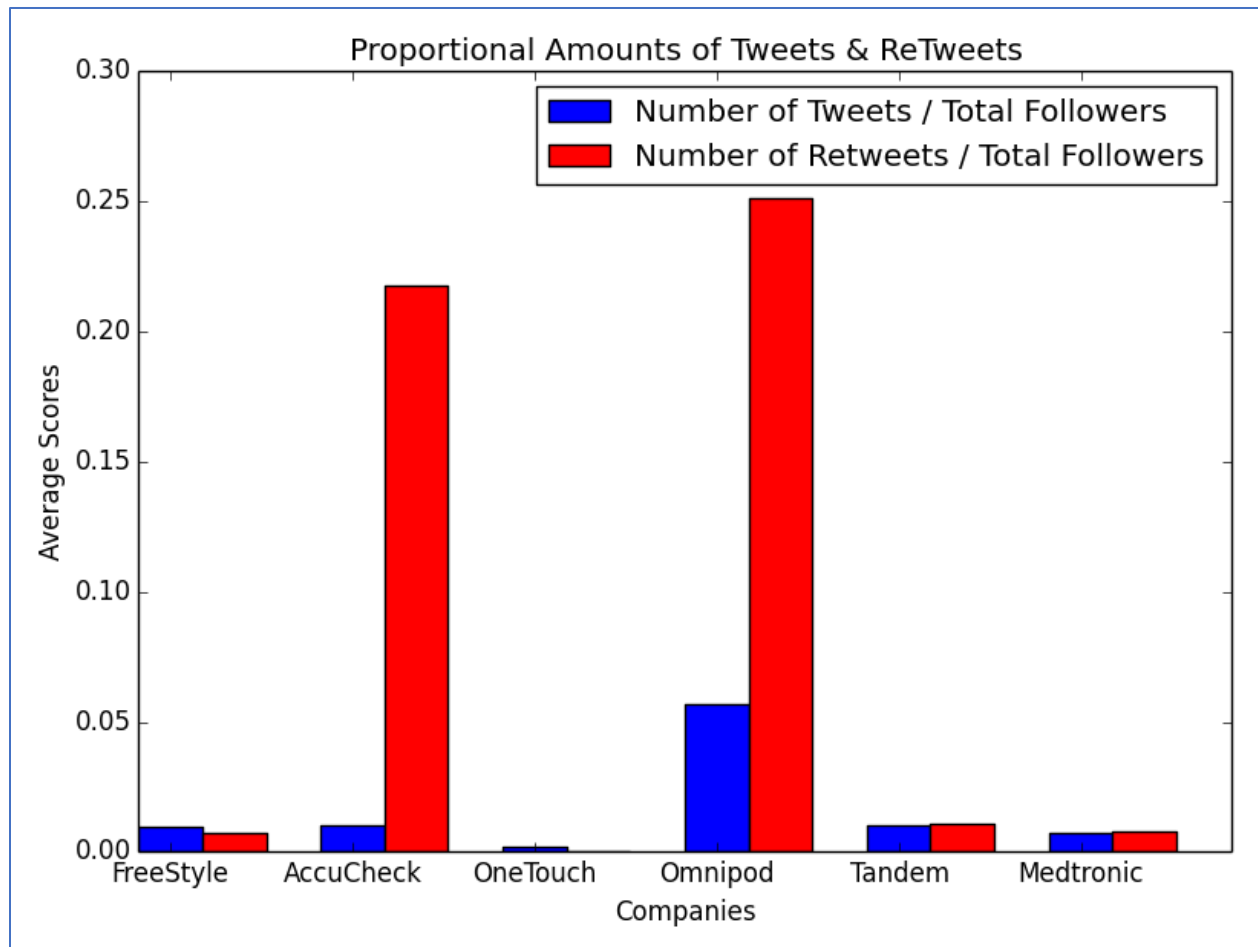
*Figure 1: Data Analysis  Results*

As seen from Figure 1, Omnipod did the best job of the insulin pump companies generating tweets per number of followers, as well as retweets.   AccuCheck did the best, in both categories, of the glucose meter companies.  This finding is interesting because while AccuCheck has more than 18 times as many followers as OmniPod, OmniPod was still as effective in generating a similar level of retweets per follower.  Omnipod is roughly 8 times smaller in followers than Tandem and 36 time smaller than Medtronic.  However, in total number of tweets, they had more than Tandem and only roughly 3 times less than Medtronic.  This seems to suggest that while the total number of OmniPod Twitter followers are the smallest groups of all of the companies, they are the most engaged. These results show OmniPod did a great job of getting the word out in the month of November.

Below is the output from the code from *GlookoData.py*:

--------------------------------------------------------------
FreeStyle data read successfully!
Total number of readings: 152
Total Number of Retweets in November = 117
Total Number of New Favorited Tweets in Nov = 0
Average Number of Retweets = 0.769736842105
Followers at the Beginning of Campaign = 15662
Followers at the End of Campaign = 15662
Range (+ additional followers / - reduction in followers) = 0
Per Cap Tweet and Retweets = 0.00970501851615 0.0074703103052
--------------------------------------------------------------
--------------------------------------------------------------
AccuCheck data read successfully!
Total number of readings: 127
Total Number of Retweets in November = 2659
Total Number of New Favorited Tweets in Nov = 0
Average Number of Retweets = 20.937007874
Followers at the Beginning of Campaign = 12238
Followers at the End of Campaign = 12238
Range (+ additional followers / - reduction in followers) = 0
Per Cap Tweet and Retweets = 0.0103775126655 0.21727406439
--------------------------------------------------------------
--------------------------------------------------------------
OneTouch data read successfully!
Total number of readings: 19
Total Number of Retweets in November = 4
Total Number of New Favorited Tweets in Nov = 0
Average Number of Retweets = 0.210526315789
Followers at the Beginning of Campaign = 9872
Followers at the End of Campaign = 9872
Range (+ additional followers / - reduction in followers) = 0
Per Cap Tweet and Retweets = 0.00192463533225 0.000405186385737
--------------------------------------------------------------

--------------------------------------------------------------
MyOmnipod data read successfully!
Total number of readings: 37
Total Number of Retweets in November = 163
Total Number of New Favorited Tweets in Nov = 0
Average Number of Retweets = 4.40540540541
Followers at the Beginning of Campaign = 649
Followers at the End of Campaign = 649
Range (+ additional followers / - reduction in followers) = 0
Per Cap Tweet and Retweets = 0.0570107858243 0.251155624037
--------------------------------------------------------------
--------------------------------------------------------------
Tandem Diabetes Care data read successfully!
Total number of readings: 48
Total Number of Retweets in November = 50
Total Number of New Favorited Tweets in Nov = 0
Average Number of Retweets = 1.04166666667
Followers at the Beginning of Campaign = 4604
Followers at the End of Campaign = 4604
Range (+ additional followers / - reduction in followers) = 0
Per Cap Tweet and Retweets = 0.010425716768 0.0108601216334
--------------------------------------------------------------
--------------------------------------------------------------
Medtronic Diabetes data read successfully!
Total number of readings: 167
Total Number of Retweets in November = 193
Total Number of New Favorited Tweets in Nov = 0
Average Number of Retweets = 1.15568862275
Followers at the Beginning of Campaign = 23562
Followers at the End of Campaign = 23562
Range (+ additional followers / - reduction in followers) = 0
Per Cap Tweet and Retweets = 0.00708768355827 0.00819115524998
--------------------------------------------------------------
Company present data read successfully!