



INTRODUCING

FAD ALGORITHM

SOCIAL ENGINEERING OF TOP TWEETS FOR
DRAMATICALLY INCREASED CLICK THROUGH
RATES

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Statement of Purpose

Implementing the Twitter hashtag search algorithm (FAD) increases click through rates by an average of 500%.

This whitepaper is intended to demonstrate the effect on click through rate's that is had by implementing the FAD algorithm for achieving rank in Top Tweets.

$$\sum_{\text{hashtag } h} \frac{f_h a_h d_h}{D_h}$$

The FAD Algorithm

Introduction

“Top Tweets” is Twitter’s equivalent of the first page on Google search result. As with Google first page, appearing in “Top Tweets” increases click through rates (CTR) by an average of 500% as determined by internal vs. external ranking, adult vs. mainstream hashtags, and the overall density of targeted hashtags. The FAD algorithm is foundational to ranking in Top Tweets. FAD works with the base of the Twitter Top Tweets algorithm to get targeted hashtags ranking in search.

Ranking in “Top Tweets Search” on Twitter for highly desirable hashtags is key to high CTRs.

Until now, hashtag strategy did not include a methodology to attain “Top Tweet” ranking.

Hashtags

The largest contribution Twitter has made to the social networking world could arguably be the introduction of hashtags. Twitter was the not the first network to use hashtags, but they were the one to popularize it. Since their introduction hashtags have been integrated into every other social network and into our culture. Hashtags are the key to increased exposure, CTRs, network growth, and engagement.



What are Hashtags?

Hashtags were originally used on IRC (Internet Relay Chat) as a way to identify groups. In August 2007 Chris Messina suggested using hashtags for groups to his Twitter followers. The idea was to create “whispering tweets” which would give users the ability to restrict tweets to that search term. His suggestion of content filtering was adapted and integrated on a widespread basis.¹

Hashtags² are words preceded by #. On Twitter, the # symbol converts the word into an internal link. When you click on that hashtag link, or search for a hashtag, it filters the search results to only tweets that contain that hashtag term. Hashtags are a keyword indexing function of Twitter.

Hashtags can be any word, without spaces or symbols. Twitter only indexes (and hyperlink) hashtags where the words that are connected to the # symbol itself. A space in between words breaks the indexing function. For example, long tail keywords, commonly used in search engine optimization (SEO) strategy, such as “Things I love” must be hashtagged without the spaces. The phrase becomes #ThingsILove. The only symbol besides # that is recognized for indexing is \$, called ctags³, which have become an indexing tool for financial symbols such as \$TWTR (stock symbol for Twitter)⁴.

The Evolution of Hashtags

Hashtags have become more than just a search tool they have become a part of our verbal lexicon. Take for example The [Tonight Show skit with Jimmy Fallon and Justin Timberlake](#).⁵ Timberlake and Fallon perform a parody skit of people speaking in hashtags. Though it is a parody, it is a reflection of how people have integrated hashtags into common vernacular.

Linguists identify this as a paralanguage. A paralanguage normally refers to non-verbal queues such as a shoulder shrug, but hashtags expand that definition. They have become a way to add subtext to a statement either verbal or written. The hashtag #FirstWorldProblems, is a popular hashtag that demonstrates adding context to tweets in

¹ Hashtag.org Editorial. “The History of Hashtags”.

<https://www.hashtags.org/featured/history-of-hashtags/>. 26 June 2012. 21 July 2016.

² “Using Hashtags on Twitter”. <https://support.twitter.com/articles/49309> 21 July 2016.

³ “On Twitter, \$ is the New #”. 18 February 2009. <http://www.wired.com/2009/02/on-twitter-is-t/> 1 August 2016.

⁴ Stock Twits: Twitter Symbol. <http://stocktwits.com/symbol/TWTR> 1 August 2016.

⁵ The Tonight Show Starring Jimmy Fallon. ““#Hashtag” with Jimmy Fallon & Justin Timberlake (Late Night with Jimmy Fallon)”. Filmed [September 2013]. YouTube Video, 2:00. Posted, September 24, 2013. <https://youtu.be/57dzaMaouXA>.



a self-depreciating manner. In this case, recognizing the ridiculousness of certain problems.

The screenshot shows a tweet from the account 'First World Problems' (@firstworldme). The tweet text is 'I want to stand in the sun, but if I do it is slightly difficult to see my iPhone screen. #firstworldproblems'. Below the text, it shows 27 retweets and 37 likes. The tweet was posted at 8:44 AM on May 11, 2016. The interface includes a profile picture, a 'Follow' button, and icons for retweeting, liking, and replying.

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Hashtags are more than just topic identifiers, keywords, or an indexing tool, they have a significant role to play in Twitter search engine optimization (tSEO) and that role has a direct corollary to click through rate (CTR).

Twitter Ranking and Top Tweets

Top Tweets

Top tweets are the tweets that come up first in a Twitter search. The Twitter algorithm determines which tweets appear in the Top Tweets search results, by determining which tweets are the most relevant to the user and the topic.

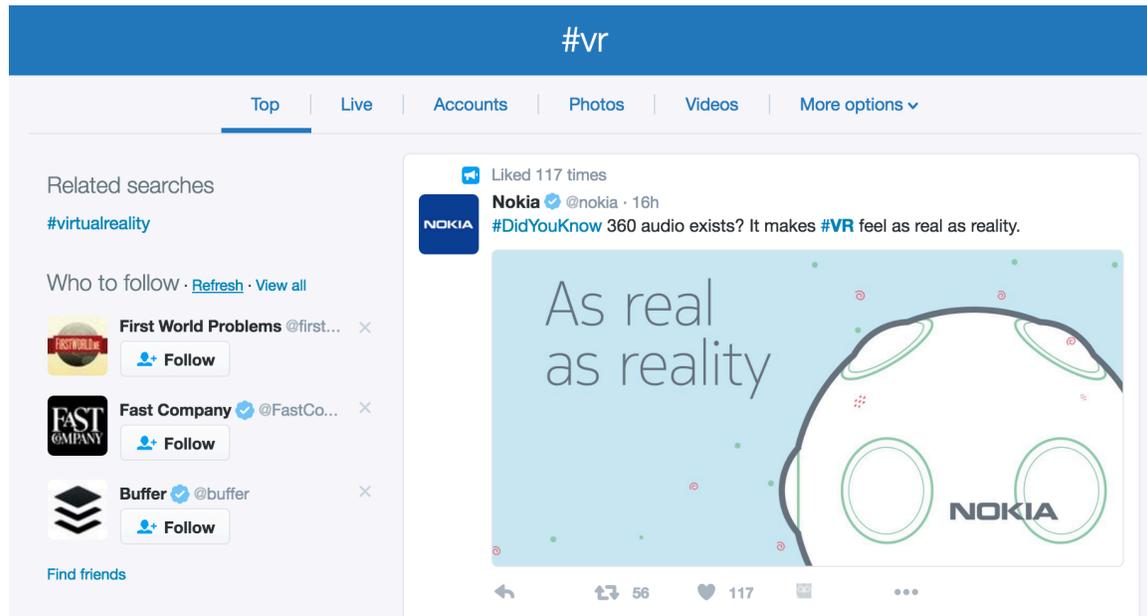
“Top Tweets are Tweets that lots of people are interacting with and sharing via Retweets, replies, and more. If Tweets you love aren't showing up as top Tweets, it means those Tweets may not be part of the widespread conversation.”⁷

⁶ First World Problems (@FirstWorldMe). “I want to stand in the sun, but if I do it is slightly difficult to see my iPhone screen. [#firstworldproblems](#)”. 11 May 2016, 8:44 a.m. Tweet.

⁷ “FAQ About Top Search Results.” <https://support.twitter.com/articles/131209> 1 August 2016.



When you perform a search on Twitter the results will be sorted in tabs by “Top”, “Live”, “Accounts”, “Photos” and “More Options.” Top is the tweets picked by the algorithm and Live is the live stream of tweets as they are published. Top is the equivalent of Google first page.



On Google 91.5% of people do not look past the first page of search results.⁸ Twitter is no different.

tSEO Ranking

Where Google is an advertising platform first and a search engine second, Twitter is an advertising platform first and a social network second. The importance of advertising has increased the importance of SEO, or on Twitter tSEO. In order to gain rank in search that is not paid for through buying ads, you must optimize for search through keyword optimization.

Keywords are to Google what hashtags are to Twitter.

We cannot underestimate the importance of tSEO on SEO. In 2015 Google included tweets in desktop search results, “Google also said the relevancy and ranking behind

⁸ Hogdon, Michael. “Value of Organic: First Page Results”. 17 June 2015. <http://www.infront.com/blogs/the-infront-blog/2015/6/17/value-of-first-page-google-results> 1 August 2016.



these Twitter results will continue to evolve and improve as the process matures.”⁹ Since Google integrated Twitter into their search results, we have seen positive results in overall site SEO for websites that actively use a Twitter hashtag strategy.

tSEO does not operate the same way as traditional SEO. Twitter has internal and external ranking, which makes the tSEO two fold. The Top Tweets are being prioritized at different levels and with different weights. Another big difference between SEO and tSEO is the frequency in which the top spots update. When you get SEO ranking in a search engine you tend to hold position for months. This is not the case with tSEO. Ranking can change as quickly as minutes or as slowly as weeks.

Internal Ranking

Internal ranking is when a tweet ranks in Top Tweets for a hashtag that is relevant to that account. If an account tweets and engages with tweets that use, or are similar to, the hashtag you are targeting your tweets will have a higher chance of showing up in top tweets for that account. So if you target #dating, and are active in the dating community on Twitter, your tweet will have a better chance of appearing in top tweets to your followers and to other people who interact with that topic regardless of them following you.

Internal ranking is the primary reason why building a quality and targeted follower base is important. A targeted follower base demonstrates that you are an active member in the community, which will benefit you affinity rating.

It is important to note that internal ranking does not tend to hold the top spots for as long as external ranking. They are far more mutable.

External Ranking

External ranking is when a tweet ranks in Top Tweets for a hashtag that is not necessarily relevant to that account. This is ranking on a worldwide level. This means that regardless of an account participating, tweeting or engaging, with the hashtag, that tweet has gained enough overall FAD (weight in the algorithm) to rank on a global level and is considered valuable to the “widespread conversation”.

External ranking is the ultimate goal of any tSEO.

⁹ Schwartz, Barry. “Google Officially Expands Twitter Into Desktop Search Results”. 21 August 2015. <http://searchengineland.com/google-officially-expands-twitter-into-desktop-search-results-228723> 1 August 2016.



For a tweet to achieve external ranking, they will have already achieved internal ranking, and often will be considered an influencer in their topic.

It is important to note that achieving external ranking will result in your internal ranking holding top spot for much longer, and is less mutable overall.

Ranking and CTR

Ranking and CTR have a direct correlation. Internal and external ranking are demonstrating an average increase of CTR by 500%. This means that when tweets start ranking in Top Tweets the standard CTR for that account increases by an average of 500% while that term is ranking.

Search ranking is not the only thing that factors in a strong CTR. You do not have to rank for Top Tweets to have a good CTR. Accounts that have a good following of real engaged users can have very strong CTRs. Accounts that get content retweets from other influential accounts, can have strong CTRs. Of course, these are also important factors that directly contribute to ranking.

Your baseline CTR is what you get without ranking. This is based on your regular and ongoing Twitter activity. The percentage increase is based on the increase from your baseline. Ranking takes your CTR and increases that baseline.

You can often see spikes in ranking when an account is ranking and then drop when they return to baseline, as seen in Figure 1.

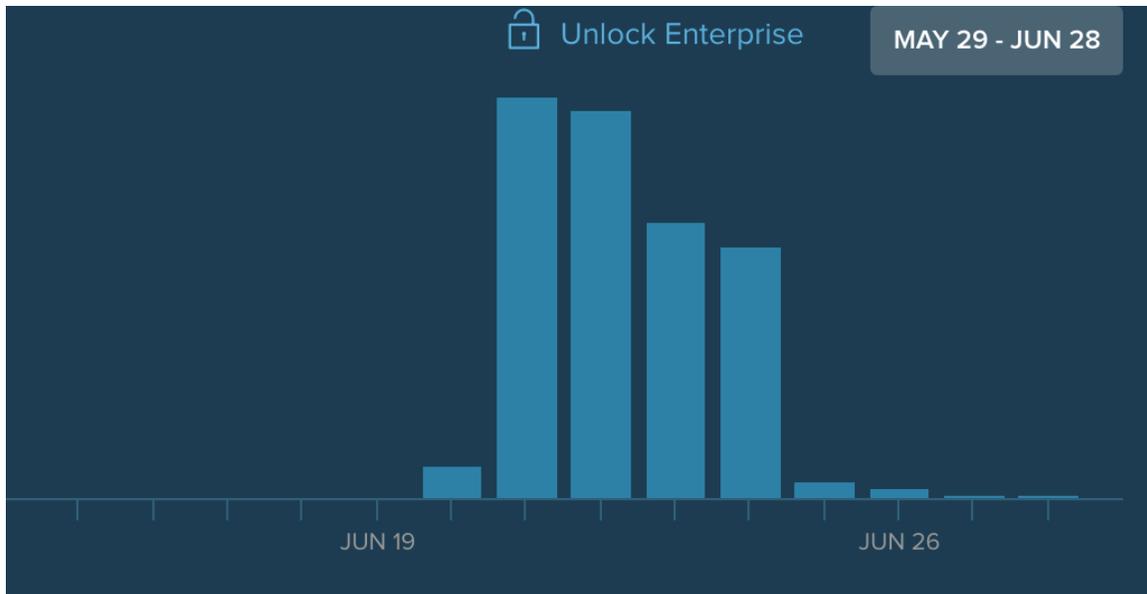


Figure 1



Twitter Algorithm

The FAD algorithm is frequency, affinity, decay over Density. It works with the foundation of the Twitter Top Tweets algorithm to get tweets ranking in search. Establishing your frequency of tweeting in relation to density, affinity and decay.

$$\sum_{\text{hashtag } h} \frac{f_h a_h d_h}{D_h}$$

f – frequency

a – affinity

d – decay

D - density

Frequency (f)

Frequency is defined as the rate of occurrence within your accounts published timeline. The rate of occurrence for the targeted hashtag is integral and relational to your other tweets.

- At what rate do you use the hashtag?
- At what rate do you engage with the hashtag?
- At what rate do you give targeted engagement?
- At what rate do you receive targeted engagement?
- What is your tweeting frequency overall?

A generality of tweets need to be targeted. The rate of generality is determined by the Density and frequency of overall tweets published by the account. The strength of your frequency, and therefore rate of frequency, is affected by affinity. A higher affinity can result in requiring a lower frequency to get the same results.

Affinity



Affinity is the influence of the tweet within the community as determined by the people engaging with the tweet. Engagement is defined as clicking a link or anywhere on the tweet, retweets, likes, and mentions. Though it does not automatically reflect a high CTR, the CTR does count as engagement and can directly impact affinity, though it appears to affect it at a lower impact than traditional engagement. You can have a strong affinity without having a strong CTR, though it is more likely that a strong affinity will have a direct positive affect on CTR.

The quality of the people engaging with the tweet has a higher impact on the affinity than general engagement. This means that the relevance of the people to the hashtag is important in increasing affinity. Having engagement from accounts that do not typically participate with the hashtag will not increase its affinity. It is vital to have engagement from accounts that are active, through clicks, retweets, mentions, or hashtag use, to positively affect the affinity of the tweet.

Decay

Decay is the length of time since a tweet was posted; its potential to drive engagement and impressions. Impressions are defined as the number of times a tweet appears in a person's timeline, which is directly influenced by engagement. Typically, the higher the engagement rate the higher the impressions. Impressions and engagement typically decrease as a tweet ages. However, the impact of decay is additionally correlated to the strength of the tweet. A tweet with a high level of ongoing engagement will slow the rate of decay, thus increasing the strength of the tweet.

The strength of a tweet is the rate at which it drives traffic and rank.

Typically the older the tweet (decay) means the weaker its impact. Older tweets can, and often do, continue to drive traffic and engagement but tend to do so at a lesser rate. The average half-life of a tweet is 18-24 minutes.^{10 11} This means that after 18-24 minutes your tweet will be seen by half the people it will ever be seen by. The fewer people that see the tweet the weaker it gets, in terms of CTR and engagement. The only factor that changes this is FAD.

The strongest a tweet will ever be is in the first 18-24 minutes.

A strong tweet that is ranking globally can be less affected by decay and maintain a position in top tweets for hours, days or even months. This removes the half-life effect of decay. The only way to remove the effect of decay (decay) is to have an extremely high

¹⁰ “This Is Why Nobody Sees Your Tweets (Explained By Math!)” (27 October 2015) <http://blog.meetedgar.com/201407this-is-why-nobody-sees-your-tweets/> . 30 July 2016.

¹¹ Hibma, Maggie. “Life of a Tweet: A Look at the First 24 Hours”. 5 December 2013. <http://blog.hubspot.com/marketing/life-of-a-tweet-ht> . 30 July 2016.



affinity (affinity) on an ongoing basis (frequency). Though you can never completely remove decay, you can significantly reduce its impact.

Ranking tweets typically increase the half-life of a tweet by a minimum of 500%.

The longer the half-life, the higher potential for strong CTRs.

Density

The primary focus of the algorithm is density, which is composed of distribution and saturation. In order to understand the potential for a hashtag you have to know its saturation.

The distribution a hashtag establishes its' saturation rate. Saturation is the quantity of tweets over time. A high saturation typically hallmarks a desirable hashtag. Trending hashtags can sometimes have hundreds of tweets posting every second. This would be considered extremely high saturation. However, a highly saturated hashtag is not specifically reflective of quality. The affinity, or quality of users, engaged with the hashtag have a direct effect on quality and therefor CTR. Additionally, higher saturation increases the difficulty in ranking and increases the importance of affinity in terms of attaining positive results. Calculate the standard deviation for that distribution and you will have established the density for that hashtag.

Tweet Ranking Behavior

Checking Rank

The only way to check if tweets are ranking in Top Tweets is to search on Twitter. We have already discussed internal vs. external ranking. When checking for ranking, it is good to check both internal and external search results. tSEO ranking on Twitter is updated by the second. Tweets with a stronger FAD score will hold position in Top Tweets for longer than ones with a lesser FAD. This means that you may rank, either internally or externally, when your tweet has been published but not hold the position for longer than a few minutes. When checking for rank it is good to check both after publication and after the tweet has had time to decay.

When an account starts getting tweets in Top Tweets the FAD score is typically weak. Frequency and affinity is key to strengthening FAD. As your FAD gets stronger, your tweets will maintain position longer.

Impact on CTR



Once you achieve ranking CTR should increase a minimum of 300%, depending on targeted hashtag. Results have varied from 300% to 8000% increase based on targeted hashtag, internal vs. external ranking, and mainstream vs. adult targeting. The most significant results have come when external mainstream targeting for adult content was achieved.

Ranking even for a few minutes after a tweet has been published, as opposed to holding ranking for longer (decay), results in an average of 300% increase in CTR.

FAD Results

FAD but Not Ranking

Figure 2 is an example of integrating the FAD algorithm but not ret ranking. This represents a 250% increase in CTR.

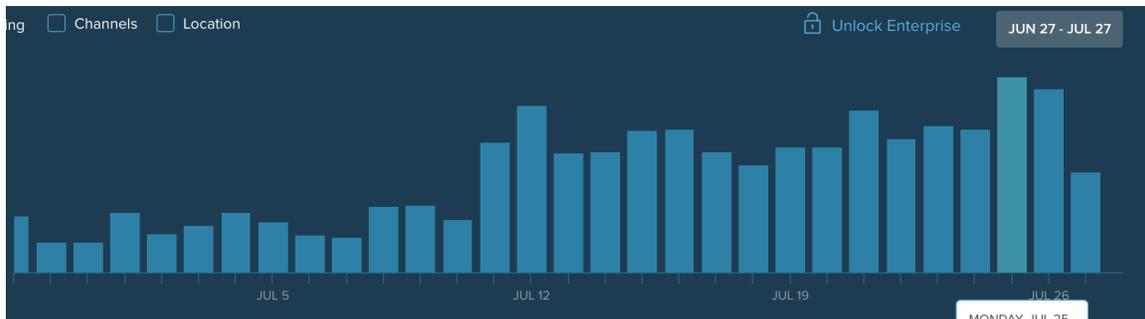


Figure 2

External Ranking

Figure 3 is an adult account externally ranking for a mainstream hashtag. You can see the impact of rank for 4 days on the CTR. In this case we stopped using the hashtag after four days of ranking to see the impact on CTR.

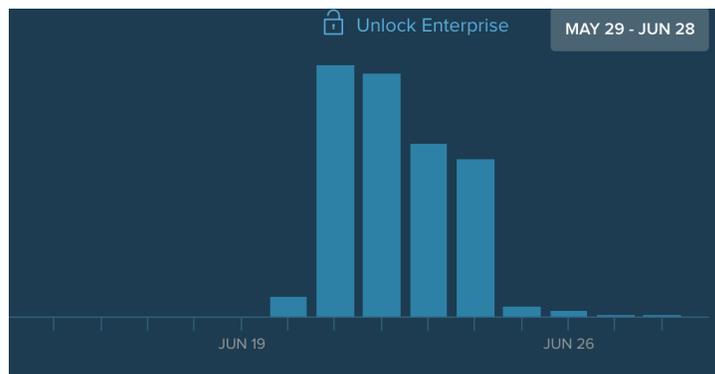


Figure 3



Short-Term Internal Ranking

Figure 4 show the integration of FAD and a 215% increase in CTR before ranking. The spike at the end is when the account started to internally short-term rank. They were ranking for only a couple of minutes, but doing so consistently. This represented a 300% increase from baseline.

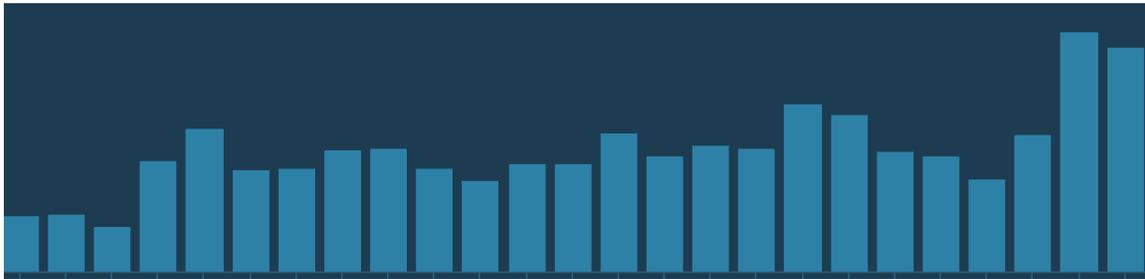


Figure 4

Internal Ranking

Figure 5 is a progression from typical CTR, to implementing tSEO with the FAD algorithm then another increase the moment the hashtag started ranking internally. Ranking represented an increase of over 500% from baseline. Implementing FAD resulted in over 200% increase in baseline CTR, prior to ranking.

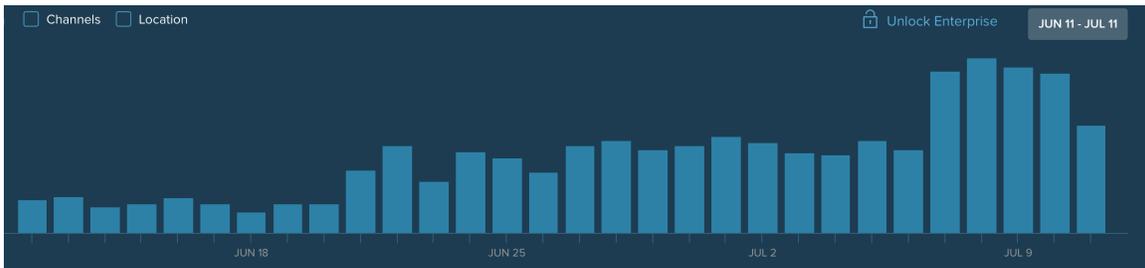


Figure 5

Increase Tweet density without FAD

To establish a baseline we ran a test of increasing the frequency of tweeting but did not integrate FAD. There was a slight increase in baseline clicks but nothing remarkable. Figure 5 shows a typical spike in clicks due to engagement but overall typical CTR despite increased frequency.

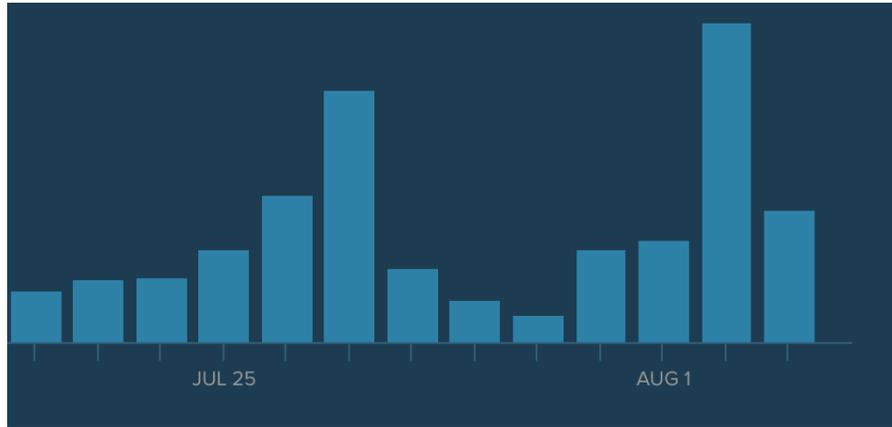


Figure 5

Conclusion

The FAD algorithm can help any account achieve Top Tweet ranking in any hashtag. The length of time to achieve that is dependent on the density of the targeted hashtag as it pertains to FAD. With proper implementation, ranking can be achieved and significant increases in CTR will be attained.

Interested in Implementing the Algorithm

If you are interested in implement the FAD algorithm into your Twitter marketing strategy, contact Lauren MacEwen (lauren@7veils.com, www.7veils.com) to discuss hashtag testing and implementation strategy.

About the Author



Lauren MacEwen is the CEO and primary strategist of 7 Veils Media, Inc, a social media marketing company that focuses on the adult entertainment industry. Lauren achieved her BA at Smith College and MBA at Arizona State University. She is passionate about social media and works to achieve cutting edge insight into social marketing.