

A Study Shows the Best Times of Day to Post to Social Media

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U.S. companies are expected to spend more than \$37 billion dollars on social media promotion annually each year by 2020, representing 24% of the economy's total digital advertising spend. It's an astounding number, given that the vast majority of social media managers charged with getting customers to click on posts and through to their websites operate with little strategy beyond what we call "spray and pray," an approach that litters social media with firm generated content in the hopes that one or more of those posts draw in customers.

There is a better way. Our research on circadian rhythms suggests that content platforms like CNN, ESPN, National Geographic, and others can enhance their profit payoffs by at least 8% simply by posting content following the biological responses of their audience's sleep-wake cycles and targeting content types to when the audience is most naturally receptive to it.

On the surface such an approach doesn't sound difficult. But social media managers face innumerable possibilities for posting content. For example, a social media manager tasked with posting 10 stories in a day and with a budget to promote four of those stories can schedule the sequence of social media posts in over 7 trillion ways. By replacing rules-of-thumb and gut feeling with precise science rooted in biology, we believe social media scheduling can not only be more cost-efficient, but also be a strong part of content platforms' profitability.

Putting an Ad Hoc Strategy to the Test

We interviewed social media managers from several major content platforms about how they decide what to post and when. Overwhelmingly, we heard that they made decisions using simple rules of thumb. For example, they would post between 7 am and 9 am and pace stories at least 30 minutes apart. In this time period, they generally focused on local and sports news but did not pay attention to whether the posts were meant to make readers angry or happy or surprise them.

Also, the managers typically had a budget for "boosting" posts. That is, they were able to pay social media platforms to advertise specific posts to broader audiences based on demographics, interests, and location, which potentially increased the click-through rate. Most of the managers we spoke with spent a bulk of their budget on boosting local and sports news, which they believed would match their audience's preferences. Regardless of whether or not a post was boosted, social media managers had a specific goal: to attract a proportion of interested visitors to click-through to their website. Because advertisers featured on the content platform's website are willing to pay for unique impressions, the impressions channeled through social media link clicks generate significant digital advertising revenue for the content platform.

When we examined the link clicks of 5,706 posts on the Facebook page of a major U.S. newspaper, we found that, true to what social media managers suspected, morning posts had higher click-through rates than posts at other times of the day. Specifically, content posted in the morning attracted 8.8% more link clicks than content posted in the afternoon, and 11.1% more

link clicks than content posted in the evening. But the managers' ad hoc approach to "boosted posts" did little to bring in revenue, nor did their assumptions about when to post specific content types prove true.

Surprisingly, we saw that boosted posts in this data set earned \$60,921 more in revenue in the afternoon than in the morning, and that while local and sports stories were popular, entertainment and lifestyle stories generated the most amount of link clicks. Most surprising to the managers we interviewed was our conclusion that social media content that made readers feel angry or worried led to more links clicks in the morning compared to posting content that elicited the same feelings in the afternoon or evening. In short, all else being equal, posting content with a negative slant in the morning, and boosting posts in the afternoon yielded overall higher click-through rates and better returns than what social media managers typically saw with "spray and pray."

The Science Behind a Successful Strategy

We can explain why the negative morning posts and the boosted afternoon posts are most profitable for content platforms by considering human working memory, which is responsible for temporary storage and manipulation of information needed for our daily tasks. Human working memory exhibits inherent variation across time of day and is highest when we wake up in the morning, lowest in mid-afternoon, and moderate in the evening. Higher availability of working memory makes individuals alert and feel the need to seek information. This means that consumers' desire to engage with content will likely be highest in the morning, lowest in the afternoon, and moderate in the evening.

Importantly, when working memory is more resource deprived, the brain prioritizes preferential information in order to stay efficient. When consumers are exposed to boosted content—which is required by law to look different from non-boosted content—on social media, the working memory picks up an external cue that this is important information. Thus, boosted content is most effective in the afternoon (when our working memory is low) and least effective in the morning (when our working memory is high). Consumers' receptivity to content eliciting deep cognitive processing varies according to the availability of working memory, too. In our research we saw articles that required deeper engagement with ideas—think op-eds and science-based articles—were more frequently clicked on in when working memory was high.

As the working memory becomes resource deprived in the afternoon, it activates a natural mechanism that inhibits any information that creates emotional responses which hinder the function of working memory. This minimizes distraction toward focal tasks and in turn increases attention toward focal cognitive tasks, which results in higher engagement toward posts involving superior cognitive processing.

Using Biology to Gain an Advantage

Knowing how social media posts perform by time of day, content type, and boosting we built a prescriptive decision support tool to help social media managers decide which time slots to pick for each post, which posts to boost, and how many posts to boost in a day given a boosting budget. We also drew on two other important findings of our research: that the sweet spot for inter-post duration within our data lies in the range of 30-90 minutes and that while every dollar spent on boosting does increase link clicks, increased spending has diminishing returns. We calibrated our model parameters using Facebook posts from 355 days for a major U.S. newspaper and then used these model parameters within our decision support tool to predict profit-maximizing schedules for the next 10 days, constraining the budget for boosting to the one that the newspaper firm had allocated for those 10 days. When we compared the projected gross profit resulting from the proposed schedule with the actual gross profit realized by the firm during those 10 days, we found that the proposed schedule resulted, on average, in an 8% increase in gross profits.

While the tool did make profitable decisions, many of our lessons can be implemented quickly and independently by any organization. For instance:

- All else equal, posting content in the morning results in higher engagement.
- Boosting posts is most effective when the target audience is experiencing low working memory.
- Assuming the majority of the audience start their day in the morning, it is ideal to post content conveying high-arousal emotion (i.e., angry or worried) in the morning and “deep think” content in the afternoon.
- A firm does not need additional boosting budget to increase gross profits. Simply rearranging the posts to match content preferences of target audience can do the trick.
- Increasing boosting budget does not necessarily increase gross profits. There is a tipping point where additional spending results in only marginal increases in gross profits.

In this burgeoning and lucrative field of social media content scheduling, the aforementioned guidelines can and should replace “spray and pray.” In 2017 alone, users worldwide consumed about 5.53 billion hours per day of social media content, up by 264% in the past five years. With a real strategy, built from an understanding of WHY consumers engage with a firm’s social media content, content platforms have a chance at capturing more and more of that valuable attention and being able to monetize their digital content.

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