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What it means for marketers
Executive Summary

While reaching a target audience with relevant messaging and effective creative is a step in successfully driving business outcomes; it’s also important to consider frequency.

What it means for marketers

To explore how to most effectively plan for frequency on digital, the Facebook Marketing Science team conducted experimental research to determine how different frequency levels affect the total brand impact realized. From this global meta-analysis of 11 large brand advertiser campaigns, we aimed to better understand the effect of varying weekly frequency caps for large brand advertisers and consider the factors that advertisers of all sizes and objectives should consider when planning for frequency.

Frequency and brand impact: To understand the impact of frequency of exposure on ad recall and purchase behavior, we ran brand polls on Facebook and found that the amount of brand lift was positively related to the weekly campaign frequency cap, with relatively higher frequency required to shift purchase behavior. We examined the total campaign brand lift in ad recall and purchase intent that might be realized at different weekly frequency caps, and found a frequency cap of 1 to 2 per week was able to capture a substantial portion of the total potential brand impact.

Factors influencing effective frequency levels:

For brand advertisers with a large market share and high base levels of brand awareness, a frequency cap of at least 1 to 2 per week was seen as an effective level of frequency. Marketers working with different brands and objectives should tailor the frequency of each campaign with market, message and media factors in mind.

Read on for more details on the study, its design and our conclusions.
Introduction

For brand marketers, there are three crucial components of an effective marketing campaign: reach, frequency and creative.

When a brand doesn’t know exactly who is in the market for its product or who would be most receptive to product messaging, reach is, or should be, the primary goal of the marketing campaign. Recent Facebook Marketing Science research shows that optimizing towards reach on Facebook allows advertisers to drive brand outcomes cost efficiently and positive sales ROI performance at scale. Building effective ad creative has also become of crucial importance, as we’ve seen what works for one marketing channel may not translate perfectly to another.

While reaching a target audience with relevant messaging and effective creative is a step in successfully driving business outcomes, it’s also important to consider frequency.

The effective frequency—the frequency level required to drive consumer action—will depend on various factors. For example, it stands to reason that a high frequency might be needed to convince people to try a new product from a new brand. But for a well-established brand, a relatively lower frequency might be enough to drive and maintain awareness. Frequency can also vary depending on individuals in a target audience—where one exposure may be enough for a brand champion, it might take several exposures to convince a person who has only ever bought a competitor brand’s product.

So how should advertisers decide on the right level of ad and message exposure when planning campaigns on Facebook and Instagram?

To help address this question, this paper will examine the value for brand marketers to plan for reach at an effective frequency of exposure, supported by data from 11 brand campaign tests.

We’ll describe the relationship between the frequency of advertising exposure and brand lift and describe how frequency planning can provide marketers with opportunities to drive greater brand impact. We also looked at where this impact may be sacrificed through insufficient frequency levels and the implications of this for advertisers of all sizes and objectives.
Methodology

Facebook Marketing Science employs an experimental design to test advertising effectiveness concepts. Our people-based platform is uniquely positioned to execute randomized controlled trials (RCTs) at scale and has the ability to cap ad exposure at various predefined levels. The ability to randomize individuals to a marketing campaign at a given frequency level makes it possible to isolate the impact that frequency has on brand response with minimal bias.  

To develop a robust and representative understanding of the relationship between frequency of exposure and brand impact, we ran multi-cell experiments across 11 large brand campaigns and aggregated these results into a meta-analysis.

We created a multi-cell test plan in which we randomized the campaign target audience into four non-overlapping groups:

1. Control, no exposure—held out from all campaign activity
2. Reach and frequency buy with a “low frequency” of exposure (e.g., frequency cap of 1 per week)
3. Reach and frequency buy with a “medium frequency” of exposure (e.g., frequency cap of 2 per week)
4. Reach and frequency buy with a “high frequency” of exposure (e.g., frequency cap of 3 per week)

The range of frequency caps tested in each study was chosen by increasing the frequency range of an advertiser’s existing plan.

The randomization of target audience to each of the four test cells described above ensured there were no systemic differences between cells with respect to factors we observe on Facebook, such as demographics and usage of our platform, as well as to factors we are not able to observe, such as off-media consumption.

To understand the impact of frequency of exposure on breakthrough and purchase behavior, we ran brand polls on Facebook against one or more of the following brand metrics:

- Ad recall: Do you recall seeing an ad for Jasper’s Market on Facebook in the past 7 days? (n=11)
- Purchase intent: Will you consider Jasper’s Market the next time you shop for groceries? (n=7)

Facebook brand polling uses best-in-class experimental design to measure campaigns, where polls are served to the test groups and a control group with identical characteristics. By comparing the resulting difference in brand metrics between each of the three frequency groups and the control, we were able to calculate the incremental response in brand metric, i.e. brand lift, resulting from each level of frequency of exposure.
Methodology

Campaign set up

Each of the individual studies were set up consistently to facilitate the subsequent pooling of results in the meta-analysis:

- Reach-optimized brand campaign using Facebook’s reach and frequency buying tool
- Campaign length of three to four weeks
- Number of different creative assets included as part of the campaign was limited to the frequency cap in the low-frequency group
- Campaigns were either video or display, but not mixed

Frequency capping on Facebook

It’s often not possible on traditional media channels to accurately increase the frequency of a campaign without ceding control over the total reach and maximum desired frequency. Facebook’s reach and frequency buying tool allows advertisers control over both with the ability to set the desired frequency cap —i.e., the maximum frequency level for individuals over any chosen interval period in a campaign—without affecting their reach goals.

This tool also gives advertisers control over the maximum level of ad exposure—with the total frequency of ads delivered to individuals will be ≤ this maximum level. For example, a campaign with a frequency cap of 2 per week over a four-week period will result in individuals in the target audience receiving anything from a total of 1 to 8 exposures each across the campaign, and as a result the average frequency across users in a campaign will be less than the maximum level. The tool currently offers advertisers control over their target frequency cap rather than their average frequency; the results and recommendations presented in this paper are therefore positioned with the concept of frequency cap planning in mind and should be interpreted in this context.
Methodology

Meta-analysis description
The meta-analysis combines the results of 11 brand campaigns across Europe, North America, Asia Pacific and Latin America carried out between January 2015 and February 2016. These campaigns were representative of large, well-known Consumer Packaged Goods (CPG) brand advertisers with high market share and share of voice for their categories and markets.

For this study, we controlled the frequency cap for each of the individual campaigns in our meta-analysis. The median weekly frequency cap across all test cells was 2 (with 50% of campaigns ranging between 1 and 3 per week), and almost all of the campaigns (> 75%) were longer than three weeks in duration. Each campaign had a total reach of 4.5 million+ (1.5 million+ reach in each exposed cell).

From individual study to meta-analysis
Our randomized test design ensured there were no systematic differences between the control group and the test cells within each study, allowing us to compare the relative brand lift of each campaign with less bias than would otherwise be possible. The results described in this paper therefore describe the average campaign impact realized given a particular choice of weekly frequency cap.

Our analysis used a two-stage meta-analysis to model the dose-response relationship of frequency of exposure and brand lift:

1. For each of the individual studies, obtain (age and gender) adjusted frequency-specific estimates of brand lift for each of the frequency test groups relative to control, together with their associated standard errors.

2. Model the relationship between the weekly frequency cap of exposure and all of the study-level brand lift estimates listed in 1 above using an adapted generalized least squares method, accounting for the correlation of frequency-specific estimates within each study.
Key findings

Part I: The frequency of ad exposure influences the extent of brand impact

Although a fundamental part of any successful marketing campaign is to ensure the audience notices and remembers an ad, the overall objective for some advertisers is to increase brand awareness or purchase intent and ultimately drive sales. In this study, we found not only that the size of brand lift was dependent on the frequency level but that higher frequencies were needed to impact greater behavior change, such as purchase intent.

Figure 1 shows the aggregated predicted lift in ad recall (vs no exposure) by weekly frequency cap together with the associated 90% confidence interval (11 studies with ad recall questions asked).

![Figure 1. Predicted lift in ad recall](image-url)
Key findings

We found that the lift in ad recall increased steadily with the frequency cap, but the rate of this increase started to slow substantially after a frequency cap of 1 per week. Although higher lifts were observed with higher weekly frequency caps, advertisers have the ability to shift ad awareness on Facebook at lower levels.

Figure 2 shows the aggregated predicted lift in purchase intent (vs no exposure) by weekly frequency cap together with the associated 90% confidence interval (seven studies with purchase intent question asked).

For purchase intent, we found that lift also increased with the frequency of exposure but that this rate of increase did not start to slow until close to a frequency cap of 1.5 per week. This supports the view of a need for greater exposure to messaging to affect intent.

Most of the studies for which we recorded purchase intent employed a per weekly frequency cap of 2 or less, hence the wider confidence interval around lift estimates for weekly frequency caps of over 2 (right hand side of dashed red line). In other words, although there’s sufficient evidence to support an increasing lift in purchase intent up to a frequency cap of 2, the limited data after this point suggests that the relationship between weekly frequency caps of over two and the lift in purchase intent could not be accurately estimated.

The results shown for both ad recall and purchase intent exemplify the idea that, depending on campaign objective, different frequency levels are required to ensure the greatest campaign impact on brand metrics.
Key findings

Part II: Planning for frequency can minimize lost campaign impact

From our tests, we found that it was possible to shift both ad recall and purchase intent at relatively low frequency caps (≤ 1 per week). However, given the considerably greater lifts observed at higher frequencies, we wanted to understand the brand value foregone by a low-frequency marketing strategy.

To do this, we examined the total campaign brand lift in ad recall and purchase intent that might be realized at different weekly frequency caps. Through this approach, we were able to better understand the marginal gains in brand lift and estimate the potential lost brand impact from insufficient frequency of exposure.

Figure 3 shows the cumulative brand lift for both ad recall and purchase intent as the frequency of exposure increases.

The increase in the cumulative lift in brand metrics for frequency caps below 0.5 to 1 was steepest relative to frequency caps above, suggesting that the first impressions, in relative terms, were the most effective in driving incremental lift for both ad recall and purchase intent.

**The value in low-frequency reach**

Going from no impressions to a cap of 1 per fortnight (effectively per weekly cap of 0.5) provides relatively more lift than going from per weekly cap of 1 to 1.5 per week. Campaigns with a low frequency cap, should be able to influence a proportion of individuals without the need for multiple exposures. This suggests that there is value in low-frequency reach and caution should be exercised before sacrificing reach at the cost of increasing frequency of exposure.
Key findings

Though a low-frequency reach strategy can generate some impact, this is a sub-optimal approach for those looking to get the most value from their campaign. By buying at the lowest level of exposure (considered here as per weekly frequency cap of 0.5), only around 55% of the potential ad recall lift and a significantly lower 40% of the purchase intent lift from a campaign was captured.

With a frequency cap of 1 per week it was possible to capture up to 80% of the total potential brand lift in ad recall. With a frequency cap of 2 per week, up to 95% of the total potential brand lift in purchase intent was captured. With a high-reach/low-frequency-focused campaign, additional potential brand impact could be lost.

Planning frequency levels should be part of the campaign planning process no matter the campaign objective. As we’ve shown here, for brand recall and purchase intent there is an effective frequency level to hit to capture the largest percentage of the total possible campaign impact.
Key findings

Part III: Effective campaign frequency will depend on a combination of market, message and media factors

<table>
<thead>
<tr>
<th>Lower frequency</th>
<th>Base frequency</th>
<th>Higher frequency</th>
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<tbody>
<tr>
<td></td>
<td>Weekly cap of ≥ 1-2</td>
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**Market factors**
- Established brand
- High market share
- Long purchase cycle
- Less frequent usage
- High share of voice
- New brand
- Low market share
- Short purchase cycle
- Frequent usage
- Low share of voice

**Message factors**
- Low message complexity
- High message uniqueness
- Existing campaign/message
- High message complexity
- Low message uniqueness
- New campaign/message

**Media factors**
- Low season
- Long campaign duration
- Continuous scheduling
- Multiple media channels
- High season
- Short campaign duration
- Pulse or flight scheduling
- Facebook only

The results shown here are representative of large well-known CPG brand advertisers that have relatively high market share in their product category and with campaigns that were mostly three to four weeks in duration and flighted outside of holiday periods.

Although these results provide an evidence-based foundation from which to better plan frequency on Facebook, there is no “magic frequency level” that we can prescribe to suit the requirements for every brand and campaign. The factors relating to a brand and its objectives should also be considered in setting the effective frequency for a campaign.

The collection of factors shown above provide marketers with a useful framework for adjusting the effective frequency caps starting from at least a baseline frequency cap of 1 to 2 per week, which we found to be effective across the campaigns in this study.
Key findings

In this meta-analysis of studies from established brands, exposures at this level were able to drive brand impact effectively. As seen in Figure 4, high-frequency strategies might need to be utilized for various reasons. New brands and brands with low market share, for example, are likely to benefit from higher frequency levels. The same is true of brands who want to cut through the high volume of media advertising during holiday seasons. The studies in this meta-analysis involved campaigns that lasted three to four weeks, which at a frequency cap of 1 to 2 per week translates to a total campaign frequency cap of 4 to 8. For campaigns of shorter duration, for example of one week, higher weekly frequencies would most likely be required given the relatively shorter campaign duration within which to build total campaign frequency.

In this study, we limited the number of ad creatives to isolate the impact of the frequency of exposure over the variety of these creatives, however message factors such as the quality and variety of creatives will also play a crucial role in the success of a campaign and the role of frequency in driving this. Although we were able to show here that increased frequency can deliver more brand impact for advertisers, poorly crafted creative might not lend itself to the same phenomenon.

Our finding of increased positive gains in campaign impact with the weekly frequency cap lends some support to this viewpoint. It’s reasonable to assume that although relatively low weekly frequency caps may be enough to influence some people in a target audience, several weekly exposures are required to exert the same influence on most others.

Planning for effective reach and frequency is a standard practice for traditional broad reach mediums. The results shown here highlight the value in applying similar practices for Facebook, especially given the ability to control frequency delivery at the individual level.

For brand advertisers with a large market share and high base levels of brand awareness, a frequency cap of at least 1 to 2 per week could be effective in capturing the potential impact of their campaign. However, the market, message and media factors shown here should be taken into account when adjusting for frequency. Although our study wasn’t able to shed light on how a marketer should vary the weekly frequency caps given the relative importance of these factors, the findings provide a baseline frequency for marketers to guide both planning and experimentation.

The ability to manage reach and frequency on Facebook has offered us significantly more control and insight into how to generate the most valuable impact for campaigns through reach and frequency planning.6

As found in previous research conducted by Facebook, utilizing a broad reach strategy can help marketers generate more total impact cost efficiently. As we have found here, planning for reach at an effective frequency level is also key. Marketers need to better plan for both reach and frequency and understand how to implement these strategies to create successful campaigns.
Conclusion

What it means for marketers

As we continue working towards a better understanding of how to get the most impact from digital campaigns, planning for reach at the effective frequency level is key.

1. **Frequency matters.** Higher frequencies are required to impact greater behavior change, such as purchase intent. Marketers should plan for reach at a sufficient frequency with consideration of their campaign objectives.

2. **Campaigns need to be measured in terms of total impact.** There is a causal relationship between frequency and brand lift, and marketers who plan with this in mind will have the opportunity to capture the full potential of their campaign.

3. **Plan campaign frequency with market, message and media factors in mind.** There is no one-size fits all frequency level to suit the requirements of every brand and campaign. Marketers should consider their market, message and media factors when planning for frequency and realize the largest impact for their campaigns.
Notes & Sources

1 “Reach Matters: Driving Business Results at Scale” by Facebook IQ, Jun 2016.


4 For more information, see https://www.facebook.com/business/learn/facebook-brand-polling


6 For more information, see https://www.facebook.com/business/learn/facebook-reach-and-frequency-buying

Source unless otherwise specified: Facebook internal analysis of 11 brand campaigns in APAC, the EU and North America, Jan 2015–Feb 2016.

Confidence intervals

We used statistical models to consolidate the results from individual studies and produce two key pieces of information: 1) the average trend describing the relationship between the weekly frequency cap on Facebook and brand lift and 2) the 90% confidence interval around this average trend.

A confidence interval provides a range of values for an estimate that is consistent with the sample of available data. The confidence intervals shown here represent the uncertainty surrounding the trend estimate and are therefore wider where we have fewer data points, for example in Figure 2 for weekly frequency caps over 2.