



SMoX

MAKING MARKETING WORK HARDER WITH MOBILE

**Findings from MMA's
Groundbreaking SMoX Research
(Smart Mobile Cross Marketing
Effectiveness)**

Table of Contents

Background.....	2
Executive Summary	2
Detailed SMOX Findings.....	3
Methodology	3
Mobile measurement.....	3
Analysis.....	4
Marketing questions	5
The SMOX Campaigns.....	5
Key Findings.....	7
1. Optimize the price to value by size & format to get more ROI.....	8
2. Use proximity & context to boost ROI	11
3. Design for synergy	13
4. A/B Split test to increase creative impact.....	13
Best Practices Scorecard.....	14
Conclusion: Using Mobile as a Catalyst for Change	15



Background

With the ever-increasing pressure on marketers to achieve increased profitable growth and a laser focus on their bottom line, the need to understand the impact of their marketing and which part delivers the highest ROI is critical. At the same time, as mobile investment is increasing at the fastest rate of any media, there is an urgency to understand the ROI specific to mobile marketing. There is a need to understand the way in which advertising tactics work similarly or differently from other advertising in other media. And, there is a need to understand what percent marketers should spend in mobile to optimize their overall marketing performance. Yet, few have the resources to initiate a robust analysis on how mobile interacts with other media channels and how to optimize their budgets to take full advantage of the unique power of mobile.

The Mobile Marketing Association (MMA) initiated an industry wide, never-before-executed, research program to address these critical questions and help marketers fully leverage mobile to both innovate and drive business growth. With the support of key MMA members¹, the MMA selected Marketing Evolution to design and lead the research overall as well as InsightExpress to lead technical integrations and data collection (including sales data match).

The goal was to develop a new approach to scientifically assess the value of mobile in the mix using real in-market campaigns, an approach that did not exist prior. By building a methodology that includes real life campaigns, the resulting research allows for complete visibility into the media effectiveness across media. The methodology, developed by Marketing Evolution, includes Experimental Design and Statistical Modeling conducted on a continuous basis over the duration of the campaign. Exposure data is collected for all media and new technological innovations are employed to measure mobile's value even if the allocation to mobile media is low, which is usually a hurdle for many other methodological approaches. Measurement includes sales behavior, foot traffic to stores and brand impact, thus providing a comprehensive view of advertising ROI. The first five SMOX studies were executed for in-market campaigns with leading brands including: AT&T, Coca-Cola, Walmart (two campaigns) and MasterCard.

Executive Summary

The findings show that mobile is a strong contributor of campaign performance, driving results across the entire purchase funnel. From upper funnel metrics like awareness and image, to purchase intent and actual behavior (foot traffic or sales), the empirical evidence proves that mobile has a fervent contribution to campaign results, in many cases performing twice as hard compared to the campaign average and justifying a double-digit allocation of the entire media mix (not just digital) to mobile. While each campaign was different in its goals and overall impact, such a reallocation to mobile would produce significantly better results for the campaign overall, without the need to invest additional funds.

With that in mind, the findings also show a number of ways to optimize this double-digit mobile investment and make it work even harder. Specifically, the studies

¹ The MMA would like to thank the companies that support SMOX: Vodafone, TWC, Pandora, InMobi, xAd, Tremor Video, Facebook, Turkcell, Millennial Media, Verve, Urban Airship, Yahoo!, WEVE, MXM, Meredith, Videology, Twitter, Hello World, Aveda and AT&T Adworks.



illustrate tangible practical recommendations that can boost the performance of mobile as an advertising medium relatively easily and quickly. These recommendations will be addressed later in more detail but include: uncovering the relative value of different ad sizes and different formats, using location and context-based targeting to reach their consumers as well as taking advantage of creative to optimize mobile performance and to better integrate mobile with other channels. Layered across these in-campaign studies is the analysis of different advertising response based on frequency, so that impact can be optimized and diminishing returns managed.

We estimate that applying these recommendations will increase marketing ROI from mobile by as much as 100 to 180%. Doing so also begins to shed light on what's possible for mobile and for marketing overall. Mobile can be a catalyst to upgrade ALL of marketing operations to a more agile and targeted communication to achieve "right message to the right person at the right time, at the right price" across the purchasing process. Applying such a vision about mobile requires new structures that bring down silos between marketing and tech. It also demands full integration of technology and agency partners in order to work seamlessly with the organization. Consequently, it allows companies to unlock the full power of mobile and win against their competitors with tangible revenue and share shift.

Detailed SMOX Findings

Methodology

The research applies Marketing Evolution's unique cross-media attribution modeling approach, which has been independently reviewed by the ARF through two separate official reviews and leverages new approaches to provide a granular read for mobile. In brief, the methodology for SMOX starts with a complete detail on every dollar planned in the media mix. The detailed media plan is connected to digital ad servers, and all the leading syndicated databases for reach, frequency, and composition to calculate ad delivery down to the individual consumer level. A representative cross-section of consumers are sampled so that a robust individual consumer data set can be analyzed.²

Mobile measurement

Cross media mobile measurement is complicated by the fact that the mobile device has its own ID (MUID) and it has to be matched to other media exposure IDs, such as from digital, television, etc. In addition, mobile campaigns are typically smaller, and therefore not easily measured by time series or attribution modeling techniques. While other methodological approaches have been developed to measure mobile, including lab experiments, self-reported measurement for mobile or click-through recruitment to capture the value of mobile, the MMA was committed to a new and more accurate approach that leverages real-world measurement and individual level data as the basis

² A demonstration video of the Real Time Creative & Media Optimization is made available: <http://www.marketingevolution.com/mobile>



for analyzing mobile's role in the mix. With this in mind, the SMOX research studies included extensive technical integrations with media properties so that mobile ads could be delivered to consumers in the panel at the levels of frequency and exposure dictated by the research design. This rather complex technical integration allowed for in-market field experiments, and the observational research we desired, thus enabling the collection of rich individual level data for all media including mobile.

Analysis

For each consumer the dependent variables include sales (measured through data appends to sales databases or sales panels) as well as branding metrics (measured through survey), foot traffic, or other behavioral measurement such as downloads. To evaluate the impact of media as part of the SMOX methodology, Marketing Evolution runs logistic regression models that isolate the contribution of exposure to various media activities to sales (or any other KPI). The model also controls for other factors, including behavioral characteristics and demographics of the individuals in the sample³. All analysis connects back to individual media exposure patterns across all media. Individuals fall into exposed/control or heavier/lighter cells, making it possible to evaluate the incremental impact of each creative message in each media, across all the media in the mix. The analysis also allows for interaction and synergy effects across media. The representativeness of the sample is easy to confirm, because the data appends allow Marketing Evolution to compare the population dynamics to the overall population and a wide number of variables. Because this analysis is performed as the campaign runs, and generates insights about each individual creative and media performance, we refer to this methodology as RT-CMO (Real Time Creative & Media Optimization).⁴

In addition to the above, Marketing Evolution also performed a meta-analysis of over 100 studies measuring mobile in isolation using control / exposed design and integrated the deep dive analysis of these case studies into Marketing Evolution's Benchmark database. The combination of the mobile ROI analysis from the meta analysis, MMA's SMOX, and Marketing Evolution's ROI measurement for its private ROI

³ Profile variables are appended at the individual consumer level including a wide range of data, from over 300 Facebook profile variables, to over 2000 digital behavioral data fields. Geo-spatiotemporal data is also appended to the individual, such as the distance they live from a store (applicable to the Walmart analysis), the type of neighborhood the individual lives in, the local weather condition, local economic conditions, etc.

⁴ RT-CMO is distinct from backward looking marketing mix modeling in two ways. First, it is based on individual level data at the consumer level, not aggregations of data at a regional level. This has many advantages, including the ability to see exactly which messages are influencing which people, in which media. The second advantage, RT-CMO, as the name implies, is based on the current creative and campaign ROI, not weeks, months or years old message and marketplace dynamics.

RT-CMO shares a common feature with mix modeling in that it yields a media mix optimization that can be used for future campaigns – but the design is to use plans as a starting place to optimize in real-time – which has advantages over mix models inability to measure creative and media effectiveness without a significant lag.



studies for a number of brands are combined in the recommendations of mobile's share in the marketing mix.

Marketing questions

The overall goal of SMOX is to scientifically assess the value of mobile in the mix and help marketers use mobile more effectively to drive their business goals. With that in mind, the learning agenda includes the following marketing questions:

1. Investment level that should be devoted to mobile to optimize marketing ROI
2. Insights and best practices to achieve the best results from mobile
3. Learning how using mobile to its full potential as a hyper-local, one-to-one, real-time optimization marketing platform builds the marketing operations capability for the rest of the organization

Some of the specific questions we set out to answer include:

1. What value does mobile create relative to other marketing investments?
 - a. In terms of branding
 - b. In terms of sales
 - c. In terms of foot traffic
2. What is the relative impact and ROI of different types of mobile marketing?
3. How can we make mobile work to its full potential?
 - a. What are the best practices that explain why some mobile ads work better than others?
 - b. How does mobile advertising work as a complement with other media, such as TV?
4. Operationally: How can we derive insights as the campaign runs to determine which messages are working with which people, in which environments?
5. What hyper-local insights can we derive and apply to increase the ROI of mobile in the mix?

The SMOX Campaigns

The five studies that were conducted in the US cover a spectrum of industries and campaign objectives. The MMA plans to conduct least 10 more studies globally, covering UK, China, Brazil and Turkey among other markets.

1. AT&T, moto x campaign

In late 2013, AT&T launched a marketing campaign for its customizable brand of moto x smartphones. AT&T's objective was to maximize the awareness of the new device and to better understand the role of mobile in that specific campaign. The campaign used TV, print, online & mobile. The SMOX study examined the impact AT&T's campaign had on its KPI of building brand awareness for the new device among the over 18-year-old demographic, for a six-week period from September to October.





<p>2. The Coca-Cola Company: Gold Peak Tea In Spring 2014, Gold Peak Tea was preparing for its first-ever, national marketing campaign. A relatively new CPG-beverage brand, Gold Peak's primary goals were to build brand awareness and drive increased sales for Gold Peak Tea. The campaign used a mix of TV, print, online & mobile channels to drive their messaging, and Gold Peak was interested in understanding the role of each in driving the campaign's KPIs. Towards that end, this SMOX study set out to determine how effective the campaign was, and how the various media (and mobile in particular) could be leveraged more effectively in the future.</p>	
<p>3. Walmart Back To School In the summer of 2014, Walmart prepared its annual Back to School campaign - focused on driving intent to shop Walmart's grocery category among mothers with school-age children. The robust cross-media plan called for a mix of TV, FSI, online and mobile advertising. Walmart was interested in how to best use mobile: Did they have the right amount of it in their mix? What types of mobile advertising were most effective and efficient? Were there any opportunities to boost the impact of their mobile investment and better leverage mobile in order to drive their marketing goals?</p>	
<p>4. Walmart Savings Catcher In August 2014, Walmart launched its Savings Catcher program. Leveraging their mobile app, Walmart's program works by automatically checking competitors' prices and crediting the difference back to consumers, after they scan their receipt. In order to generate awareness of the unique program and mobile app, and further establish Walmart as retail's price leader, a full cross-media marketing campaign was designed to support the rollout. The campaign used a mix of TV, radio, online & mobile channels. Walmart was particularly interested in learning how various types of mobile advertising might work differently and how to optimize location-targeting.</p>	
<p>5. MasterCard - Travel Campaign In Q4 2014, MasterCard launched its Travel campaign to increase association of the card with Travel and to drive awareness of the Concierge app. The campaign also had a tertiary goal to promote the "#OneMoreDay" pledge and inspire people to take more vacation. MasterCard used a comprehensive mix of media including TV, magazines, newspapers, digital and online including social media. Towards that end, the SMOX study investigated the impact of mobile in the above KPIs, quantifying the value of mobile display, video and social as they relate to the nester and empty nester target groups.</p>	



Key Findings

I. What value does mobile create relative to other marketing investments?

The findings show that mobile is a strong driver of campaign performance, driving results across the entire purchase funnel. From upper funnel metrics like awareness and image, to purchase intent and actual behavior (foot traffic or sales), our empirical evidence prove that mobile has a strong contribution to campaign results, indicatively:

- For AT&T, delivered twice the awareness per dollar spend compared to TV and digital
- For MasterCard, mobile was the second strongest driver of image (“Good card to carry when travelling”) after TV.
- For Walmart Back to School, mobile impacted more consumers per dollar spent than both Broadcast and Cable TV. Mobile drove 14% of change in overall shopping intent despite only 7% of the spend. It also drove verified foot traffic, with location ads producing a significant lift vs. control.
- Finally for Gold Peak, mobile delivered results across the board driving 25% of top of mind awareness, 9% of image “Home Brewed taste” conversions and 6% of sales with 5% of budget.

II. What share of the media mix should go to mobile?

After evaluating the ROI of various marketing tactics, our first observation is that most marketers are under-investing in mobile. In fact based on the findings from SMOX, empirical evidence suggests that the optimal mix is currently in the double digits for most brands (see chart 1 below).

Chart 1: Optimal Allocation for Mobile



Reallocating to mobile would drive incremental impact for each campaign, making their existing budget work harder. Indicatively:

- For AT&T this would mean 12% higher awareness for the moto x
- For Walmart, this would mean a potential 15% increase in purchase intent for Back-to-School groceries.
- For MasterCard this would reinforce image (good to carry when traveling) by 7%
- For The Coca-Cola Company, it would drive 4% incremental sales for Gold Peak tea.



All with the same total budget.

III. How can we make mobile work to its full potential?

Our research identified four areas where marketers can focus in order to further increase the impact of their mobile investment. They are the following:

1. Optimize the price to value by size & format to get more ROI
2. Use proximity & context to boost ROI
3. Design for synergy
4. A/B split test to increase creative impact

For each of the four recommendations, we calculate the bottom line impact. We conclude the section with an analysis of the percent of budget that should go to mobile to optimize overall ROI.

1. Optimize the price to value by size & format to get more ROI

Mobile Display

Consistent with the research we performed for Web 1.0 more than a decade ago, we find larger ad formats working better than smaller units. But size doesn't really matter as much as the relationship of impact to cost. The current pricing makes the larger ad units a great deal. At 2.5x the impact compared to the display unit, they are only 1.5x more expensive (see chart 2). This means marketers will get higher ROI from the larger ad units.

Chart 2: Impact and ROI of Different Ad Sizes

	Price	Effectiveness
 <p>Banner Ad Size A - Box</p>	150	250 Better ROI!
 <p>Banner Ad Size B - Box</p>	100	100



Different formats have different optimization strategies. Mobile display advertising, can work well for continuity and recency strategies. This strategy is based on the observation that the ad impression delivered in closest proximity prior to the next purchase has the greatest value. In cases where it is difficult to predict exactly when the sale will occur for a given consumer exposed to the advertisement, a continuous





stream of advertising maximizes impact on future sales. Mobile Display ads, which continue to build impact across a larger frequency span may be a good fit for the continuity strategy.

Mobile Native

Mobile Native Advertising, which is a blend of content and commercial messaging, performs significantly better than mobile display (see chart 3). But in contrast to display, native ads build impact at lower frequency.

Chart 3: Mobile Native & Mobile Display



When we see greater impact at lower frequency, we find that it is because there is greater attentiveness to the content. The implication is to use native, but to keep an eye on frequency. This argument is further reinforced if one considers the cost of native, which is 5x more than a mobile display advertisement. As illustrated in chart 3, native is worth the premium, but not if frequency runs too far past the point of diminishing returns. Native also benefits from creative rotation, which keeps the message from the point of diminishing returns.

Audio and Video

Our studies illustrate that audio and video are worth the price premium over mobile display advertising.

Audio on a mobile device, like traditional audio, does fine with repetition. It continues to build impact without hitting significant diminishing returns until a dozen impressions or so over the campaign duration.



Chart 4: Mobile Audio & Mobile Display

	Price	Effectiveness
Mobile Audio 	250	350 Better ROI!
Mobile Display 	100	100

On the other hand, Video builds impact at lower frequency, and therefore frequency should be managed or creative rotation should be introduced to optimize ROI.

Chart 5: Video & Mobile Display

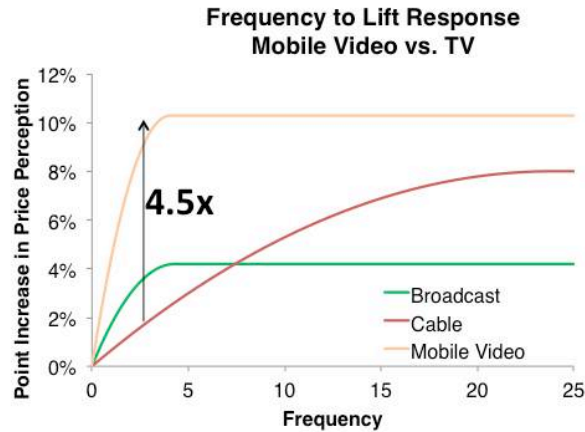
	Price	Effectiveness at low Frequency	Effectiveness at high Frequency
Mobile Video 	320	650	350 Better ROI!
Mobile Display 	100	100	100

An interesting finding about mobile video comes from comparing the performance of the same video ad when used across different screens. Specifically, comparing the video ad in mobile versus the video advertisement in cable TV, we see that the same creative performs different across screens (see chart 6). The different shape of the impact to frequency between mobile video and cable TV video suggests that those engaging in mobile video are far more attentive to the commercials on the smartphone screen - and this delivers direct ROI benefit to marketers. At current pricing, mobile video is a good investment for the marketers we analyzed, suggesting that shifting some budget from cable TV to mobile would optimize ROI. Once again, we find mobile video generating more impact at lower frequency, reinforces the idea of managing frequency or building on creative rotation to optimize ROI.

Also, as noted in the findings below about synergy, there is an opportunity to coordinate media delivery and creative execution to achieve synergy across media.



Chart 6: Mobile Video And Cable TV



Formats Overall

While we have made direct comparisons of one ad format versus another, marketers should think in terms of a mix of formats. We found that different ad formats had different types of impact. The display ad banner is a good awareness builder and reminder, keeping a brand salient. Audio, video and native had greater influence on brand perceptions and sales. A mix is likely to generate better results than if all of the budget is in a single format.

Bottom Line: Applying the format mix optimization would increase overall ROI by 20-40% for the marketers we measured.

2. Use proximity & context to boost ROI

One of the many dynamics that makes mobile special is the fact that most people carry it with them all day. This creates opportunities for context targeting by time of day and by physical place. It's also possible to target a given audience based on where they've been in the past

In terms of location-based targeting, Walmart used both approaches:

1. Audience targeting: by delivering messages to those that have visited the retailer in the past, and targeting them wherever they might be, Walmart increased the impact for the same ad unit over delivering advertising without retargeting.
2. Walmart also used proximity targeting to deliver the message when a consumer was "in range" of Walmart (see chart 7). This approach proved to be 1.5x more impactful than audience targeting, and far more effective than when no location targeting was used. More importantly, considering the current pricing, proximity targeting was a great deal in terms of the relationship of impact to cost.



Chart 7: Audience Targeting & Proximity Targeting Effectiveness

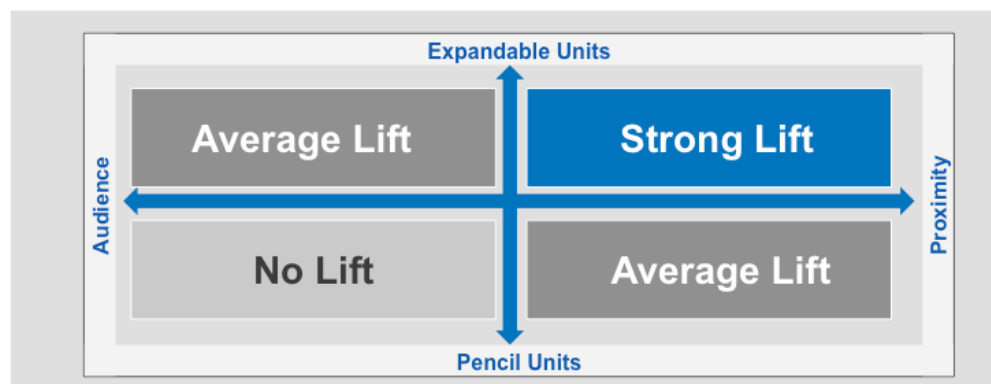
Walmart	Audience	Proximity
Location Targeting	150	250
Mobile Display	100	100

A feature of mobile measurement is the ability to examine the influence of advertising delivery on foot traffic to a store location. In this analysis, we found that location targeting also drove verified foot traffic, with location ads, producing a significant lift vs. control.

We examined the impact location targeted advertising was having and saw a differential response by ad unit type and type of location targeting. Based on this analysis we observed that:

- Location audience targeted ads with small display “pencil” units had limited or no impact in foot traffic
- Location audience targeted ads with expandable ad units (displaying more information, including distance from nearest store and map) produced significant lift over the unexposed group. The same holds for pencil units when delivered at the time a person is in proximity of the Walmart store.
- Finally, the strongest impact came from the combination of expandable ad unit and proximity targeting, generating the strongest lifts in foot traffic compared to control (see chart 8).

Chart 8: Foot Traffic Impact of audience targeting & proximity targeting by Ad Unit Size





In addition to location targeting, our research also offers evidence about the value of targeting by time of the day / day of the week. Arguably, marketers can use a number of channels to target people by time. In this case, mobile excels due to the fact that people carry their phones with them all day. Our findings in this area suggest that the opportunity varies by category and it largely relates with the time sensitivity of purchase /consumption. Depending on the category, we observed lifts from 30% (for grocery shopping) to more than 12x for more time sensitive categories.

Bottom Line: Applying the insights related to proximity targeting would increase overall ROI by 20%, on average, for the marketers we measured.

3. Design for synergy

We observed variation in how different marketers approached the design of mobile advertising. The Coca-Cola Company used a “surround sound” marketing strategy for their Gold Peak campaign. The messaging looked similar in all media. It used the same creative cues, and we observed synergies between those exposed to multiple media.

This synergy finding is consistent with a body of work dating back several decades to measurement of radio & TV synergies, which showed imagery transference when someone heard an audio ad after the television advertisement had played, so long as both used similar cues. (See [What Sticks](#), Surround Sound Marketing, pages 156-157 and 186-189).

Given that mobile is often part of a consumer experience of using their smartphone while consuming other media, it makes sense to use creative cues across advertising platforms to reinforce the message. Gold Peak achieved 23% higher impact due to synergies. Given that there are no costs to achieving message synergies, this is a high value approach that too few marketers take advantage of today.

Bottom Line: Based on the synergies observed in the Gold Peak campaign, we calculated the upside of 23%. Results may vary – 23% is in range with our other studies of surround sound marketing synergy.

4. A/B Split test to increase creative impact

Most marketers we measured had only one creative message in mobile. This misses a great opportunity to learn how different messages work for different audiences in mobile. In one of our studies, a message was 70% more impactful to a certain demographic group. The same marketer also had multiple creative messages and ran an A/B split test. The A/B split yielded useful insights into the value of putting a bit more money into production.

Some call the production part of the budget “non-working media expense.” This is an unfortunate phrase, because the work that can be done with an A/B split test can increase the overall campaign ROI. In this case, the stronger performing ad generated 20% better results. We have seen many cases where A/B split testing can double the



impact of creative performance. The ARF reports that 70% of ROI is due to creative execution. A/B split testing was only applied by one of the four brands in this research, suggesting that most are missing this important opportunity to increase ROI.

Bottom Line: A/B split testing can improve the performance of a campaign by identifying winning creative and messages that work better for certain segments. Results will of course vary, but based on our tests we observed an upside of 40%-60%

Best Practices Scorecard

Marketers applying all four of these practices can gain significantly better results with their mobile advertising. While the projection of upside is based on a small number of cases, it is the best publically available data we have in the industry at this juncture in time. Based on this analysis, we calculate a 100 to 160% improvement in mobile ROI possible from applying the recommended tactics.

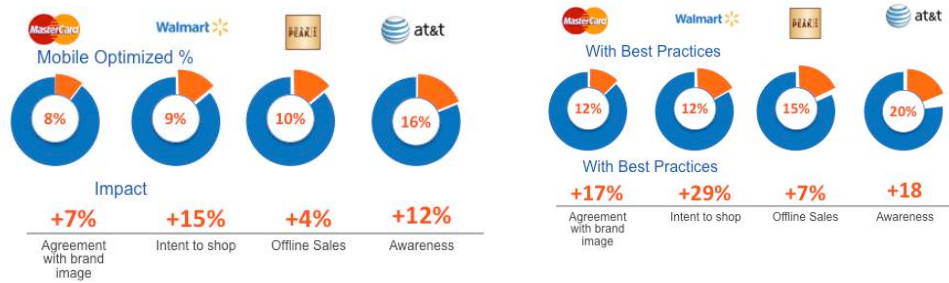
Chart 9: Upside Based on Analysis of Five Case Studies

Optimization area	ROI Upside
1. Optimize by Format	20%-40%
2. Use proximity & context to boost ROI	20%-40%
3. Design for Synergy	20%+
4. Build on Creative	40%-60%
Total	100%-180%

If each marketer applied all of these insights, it would boost their key performance indicators and lead us to recommend that an even higher share of the budget go to mobile, due to increased impact. Chart 10 shows four case examples and the optimized share of budget as mobile was executed in the case studies, along with the incremental impact from the reallocation. It also shows what the optimal allocation for mobile would have been if the best practices were applied. Corresponding with the mix recommendation is the increase that each marketer could expect in their key performance indicator with mobile in the mix.



Chart 10: Applying the Best practices



Conclusion: Using Mobile as a Catalyst for Change

There is no doubt that mobile presents the greatest transformation of marketing in this generation.

The results from SMOX clearly illustrate that mobile can be an effective part of the marketing mix. They also show clear, actionable ways for marketers to start taking advantage of mobile and increase the impact of their campaigns. Additionally the findings shed light on what's possible for mobile and for marketing overall.

As the first comprehensive study of its kind, SMOX is expected to trigger a turning point in the mobile industry. Marketers will no longer accept backward-looking analytics and new measurements must and will begin to evolve. Furthermore, a deeper understanding into attribution will be addressed with the MMA leading this charge. Marketers who employ the winning combination of greater mobile allocation and best practices will find a significant competitive advantage.

We are at a point where many marketers understand that media has fragmented and is more addressable than ever. For these companies, mobile is the ideal catalyst for change, showing the way to a more agile, hyper-targeted real-time marketing. For these innovation leaders, mobile becomes an extension of their brand promise, adding a feedback loop and generating unprecedented data.

Knowing that consumers check their phones on average 150 times a day, it's now possible for marketers to know, in real time, which neighborhoods have a different perception (or behavior) about their products or apps. And which advertising messages are most likely to change perceptions and behaviors. It's now possible for marketers to know if people went to the store after they got exposed to one of their marketing messages and whether they made a purchase or not. Gaining access to such data is unprecedented – and it's now possible with mobile. Marketers no longer have to depend on a “spray and pray” approach, mobile allows marketers to “know and measure.”

There are still challenges, however. Integrating with data from other sources and acting on such insights is difficult even for these innovation leaders. It requires new



structures that bring down silos between marketing and tech. It demands full integration of technology, media owners and agency partners in order to work seamlessly with the organization. But it also opens up new possibilities to adapt creative across all media, including local TV, radio, out-of-home and print to take advantage of these insights across the entire mix. Applying such a vision for mobile goes beyond advertising best practices. It's an opportunity to leverage mobile strategically and use it to transform all marketing to drive stronger and closer consumer engagement as well as business growth.

Some brands are already organizing their teams for this new reality. There is a focus to develop new structures and to establish a culture of thinking first and foremost about each individual consumer. They invest in resources and they take critical steps on the road to mobile maturity. And they stand to win big against their competitors, in terms of tangible revenue and share shift.

While it is beyond the scope of this paper to offer definitive advice on what mobile vision is right for any given company, this paper is intended to provide the right mix of empirical data and inspiration to help brands accelerate and optimize their mobile and marketing efforts, and to ultimately become a Modern Marketer.

SPECIAL THANKS

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Biographies:

Rex Briggs is CEO of Marketing Evolution and author of two best selling books, *What Sticks* in 2006, and *SIRFs Up, The Story of How Spend To Impact Response Functions (SIRFs) Software and Algorithms Are Changing The Face Of Marketing* (2012). He's originated the Cross Media Optimization Studies (XMOS) to quantify digital's role in the mix, working in close partnership with the ARF.

Vassilis Bakopoulos heads research for the Mobile Marketing Association and has been tasked with organizing the industry's wish list of top questions regarding mobile's role in the marketing mix. Before that he worked for Digitas and various Kantar agencies in New York and Europe.



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