

BEYOND ‘HOW MANY?’: UNDERSTANDING KEY DRIVERS OF AD PERFORMANCE IN DIGITAL ISSUES.

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Introduction

When the iPad was launched by Apple on April 3rd 2010, a digital issue of Time Magazine, featuring Steve Jobs on the cover, was made available for download. The iPad paved the way for a new generation of personal media devices, bringing new and exciting ways for Time Inc. to engage with its audiences. It offers the immersive, lean-forward, storytelling opportunities of a traditional magazine, enhanced by the new digital platform’s interactivity. Of course, as soon as the launch party had wrapped, people began to ask the inevitable questions about performance, “How did it do? How many/how long/how often?”

Thus began a lengthy journey to define, build, and implement a measurement model for digital magazines that would provide key insights to our product teams and advertising partners, helping them to optimize the consumer experience. As of July 2013, we have coded, classified, and reported on nearly 600 issues and 20,000 ads that appeared in our digital editions. Time Inc. ad performance data has been further enhanced through integration with 3rd party datasets, such as Kantar, and GFK MRI’s Starch Digital & Ad Measure. The expansiveness of this combined dataset allows us to take the conversation beyond “how many; how long; how often” by identifying some of the key factors that drive these metrics, and quantifying their relative impact on ad performance.



The goals of this paper are to:

- Provide background information about the measurement of digital issues; outline the construction of the ad performance database; and identify a scalable measure of ad performance among digital issue readers.
- Assess the linear and non-linear relationships between key factors and ad performance. Key factors include audience type, location in the book, ad clutter, presence of interactive features and advertiser product category.
- Evaluate individual effects of issue and ad level factors on ad performance and estimate the quantitative impact of these factors in a multi-level multivariate linear model.

Digital Issue and Ad Engagement Framework

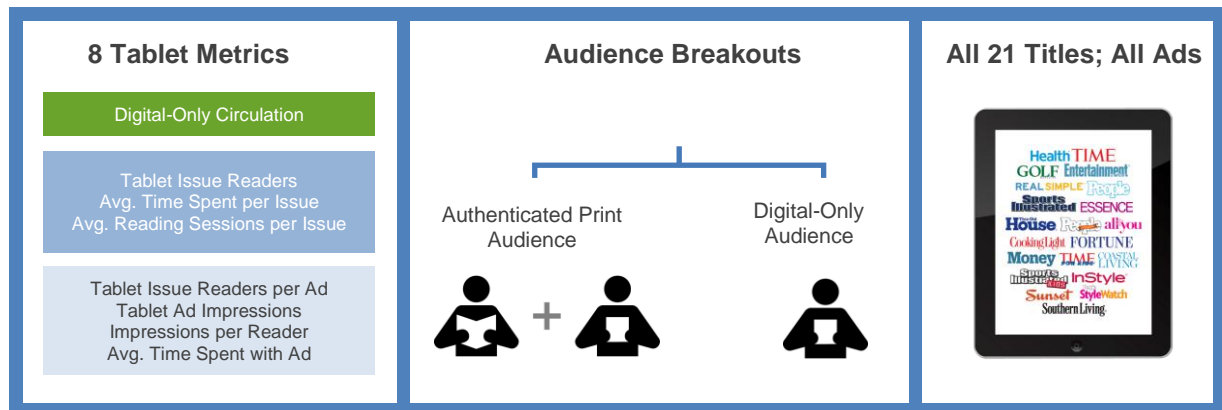
Defining Performance Metrics

In August 2011, Time Inc. announced that by year-end it would publish all 21 of its magazine titles on the leading tablet platforms. Along with that announcement came a commitment to provide advertisers with a set of issue and ad performance metrics to help them evaluate their investments in these digital editions. As each magazine rolled out its tablet version, the code from Adobe Analytics/Omniture was included to passively capture user engagement metrics such as the number of issue readers, reading sessions, time spent with issue, number of ad readers, ad impressions and time spent with the ads.

Adobe Analytics/Omniture is a powerful analytics tool, that can deliver a comprehensive list of performance metrics, uniquely customized for a broad variety of needs. Given the aggressive timeline to launch the metrics program and the complexities of reporting, Time Inc. made some key decisions around which metrics to focus on during this first phase of reporting. The final list of 8 metrics was largely driven by 4 key criteria:

- **Accuracy:** All 8 metrics in the current framework were checked & validated for accuracy in data capture and reporting.
- **Consistency:** All 8 metrics are consistently captured across all Time Inc.’s Titles and Platforms. Time Inc. also worked with Industry Organizations, such as the Association of Magazine Media (MPA), to ensure our measurement was in-synch with the broader industry standards.
- **Scalable:** Adobe Analytics/Omniture can offer highly customized, deep reporting, however we limited the scope to ensure the process for acquiring and reporting that data was scalable. As our process improves, our scope will expand.
- **Meaningful:** Focus on those metrics that are most relevant to the broadest range of clients.

The final list of metrics and the overall reporting framework can be summarized as follows:



See Appendix for detailed metrics definitions

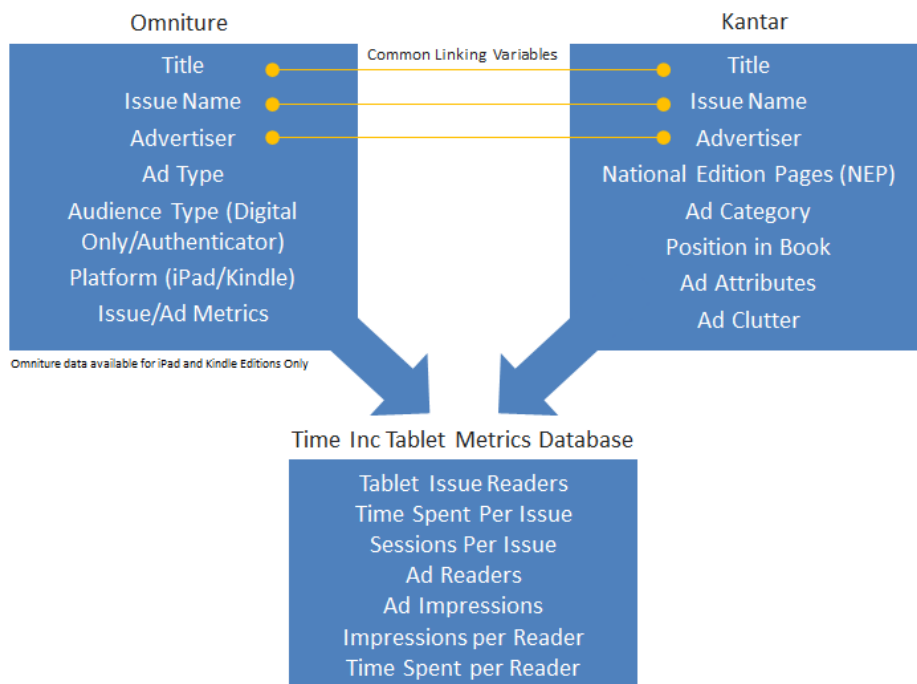
Enhancing the Performance Database

Time Inc. Performance Database is powered by the passively captured Adobe Analytics/Omniture engagement data which provides full visibility into all digital issues consumed on iOS and Kindle Fire devices.

As is typical with new media channels, 3rd party syndicated measurement tends to lag initial consumer adoption. This is due to a variety of reasons including scale, methodology, development costs and demand. Fortunately for digital magazines, a number of third-party syndicated data sources already exist for the printed product, which can be leveraged in this new digital channel.

Like many publishers in the industry, Time Inc. has adopted an ad model whereby advertisers who appear in the printed issue are entitled to appear in the digital issue, in the same running order. Advertisers can choose to upgrade to an “Enhanced for Tablet” (EFT) version of the ad, which takes full advantage of the tablet’s interactive features to deliver a more engaging ad experience. The comparability of ad placement between print and digital issues allow us to integrate Adobe Analytics/Omniture data with 3rd party datasets such as Kantar’s PIB data and MRI’s Starch Digital and Print Ad Measure data.

The analysis covered by this paper is limited to those ads that have a direct match with Kantar’s PIB database. This is a subset of all ads reported by Time Inc., and it brings the universe from 20,140 to 17,647 ads as of July 2013.



Time Spent with Ads as a Measure of Performance

There are many possible measures of ad performance and given the relative short history of digital editions and its rapidly changing landscape, it may be unwise to rally too strongly around a single measure of success. It may be equally unwise to rally around none, while we wait for the right measure to emerge. For the purposes of this analysis, we have decided to focus on average time spent with ads among issue readers as one possible measure of success.

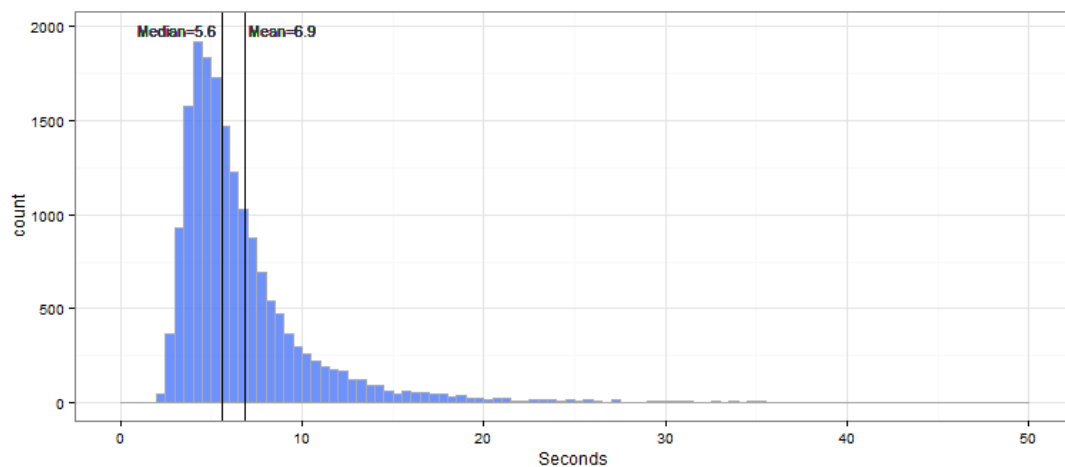
We believe it to be a broad measure of consumer engagement, in that it includes the time spent for those that simply looked at or read an ad, those that tapped on interactive elements within an ad, and those that browsed an advertiser/external website from within the digital issue.

We also believe it to be a strong measure of consumer engagement. In our digital issues, an ad occupies a full page or tablet screen, providing the advertiser with 100% share of voice for that page. In addition to share of voice, the time spent with that ad is completely controlled by the consumer, who initiates the ad exposure by swiping to an ad page, and can swipe away from that ad page at any time. This is different from time spent measures in other media, where ads may be adjacent to content, or where a consumer is forced to view an ad for a fixed length of time, or where an ad may run in the background without an active audience.

The histogram in Figure 1 allows us to graphically represent the frequency distribution of average time spent with each ad that appeared in our issues since 2011 (excluding special issues and outliers >50 seconds). Each horizontal bucket represents 0.5 second interval on an x axis that ranges between 0 to 50 seconds. Each vertical rectangle represents the number of ads that have an average time spent within that interval.

The right tail of this histogram is considerably longer - "a skewed right" distribution. It can be seen from the chart that most of our ads accumulate somewhere between 3 and 8 seconds, with the highest frequency observed around 5 seconds. However, ads that have created the tail accumulated somewhere between 10 and 50 seconds per reader and are considered to be highly engaging. Somewhere among the characteristics of these ads is the key to understanding what it is that can keep a consumer engaged beyond any expected norms.

Figure 1. Distribution of Average Time spent per Ad for All Tablet Readers

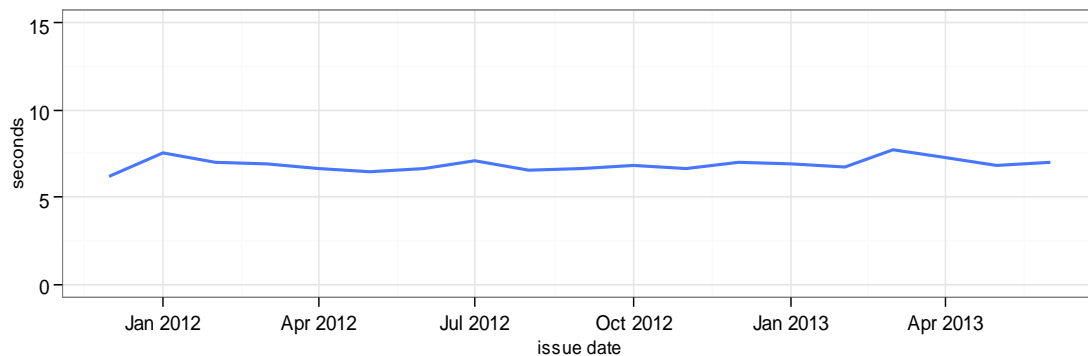


Source: Omniture, Kantar, Time Inc. titles, iPad and Kindle platform, Dec '11 to June '13. N=17,645

Because of the nature of this distribution, the median can be considered to be a more accurate measure of the center or typical value of time spent compared to mean, as it is more resilient to outliers. This chart shows that the mean, affected by outliers, is about a second larger than the median.

Finally, we believe it to be a *stable* measure of engagement showing consistency over time, despite the dramatic changes in the broader Tablet landscape. Figure 2 shows average monthly time spent by issue launch date line for every ad.

Figure 2. Longitudinal Trend in Average Time Spent per Ad Across all Time Inc. Titles



Source Adobe Analytics; Time Inc. Tablet Database – Dec '11- Jun 2013 Issues.

Our focus on average time spent with ad should be viewed as a first step in our efforts to understanding ad performance in this new medium. It is an accurate, consistent, and scalable measure of consumer engagement that may be best understood in the context of a broader ad performance model, which includes interaction measures, awareness and persuasion measures, and sales impact measures. All of which are topics to be examined in future analyses.

Findings

While ad creative is often considered the most important driver of ad engagement, other ad, issue, title, placement and audience characteristics can play an important part in generating additional lift in the amount of time a user spends interacting with an ad. In this section we examine some of the factors that appear to impact time spent with ads across issues and titles (Part 1). Recognizing that these bivariate relationships are isolated pieces of the puzzle, we will encompass these factors into a single model, where we attempt to quantify the impact of each individual factor, accounting for the effects of all other factors in the model (Part 2).

The following factors and their impact on ad engagement were selected to be examined in depth:

- Audience Type
- Ad Type
- Ad Category
- Position in Book
- Clutter
- National Edition Pages (NEP)
- Issue Length

PART 1: KEY DRIVERS OF AD PERFORMANCE

Performance by Audience Type:

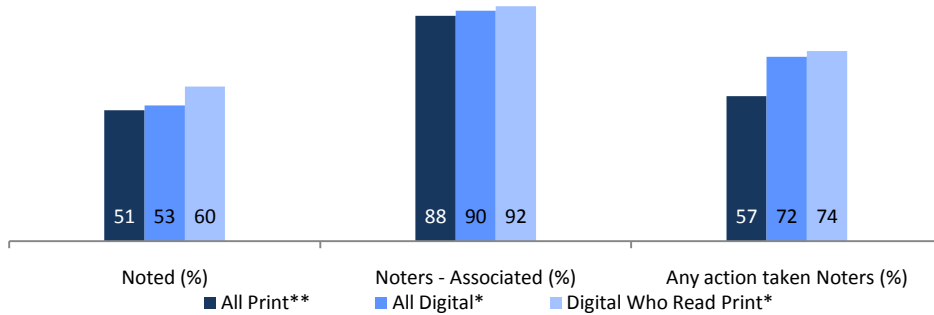
The Total Digital audience is composed of 2 different types of consumers, “Authenticated Print” and “Digital-Only” subscribers, who engage with their digital issues in very different ways.

Authenticated Print subscribers can enter their account information or “authenticate” at their preferred digital magazine store, giving that device access to digital issues for the duration of their print subscription. This audience continues to receive print copies of their magazine, but they now have the option to also read them digitally.

Because this audience is consuming content across 2 different platforms, we often find the engagement metrics among this group are lower than those that only have access to the content digitally. This is not to imply that these customers are any less engaged with an issue’s content overall, it just means they have the option to consume part of an issue in print and part of the issue in digital. Since the Omniture data set only reflects that digital consumption, the engagement levels reflect that partial digital engagement, which is a limitation of this dataset.

In fact, when evaluating the Authenticated Print audience against a different set of measures, MRI’s Starch Digital, it suggests that those that read the issue in both formats have the higher average “noted” and “actions taken” scores than either the All-Digital Audience or the All-Print Audience. This is something to be explored in more detail in a future analysis.

Figure 3. MRI Starch Digital KPIs



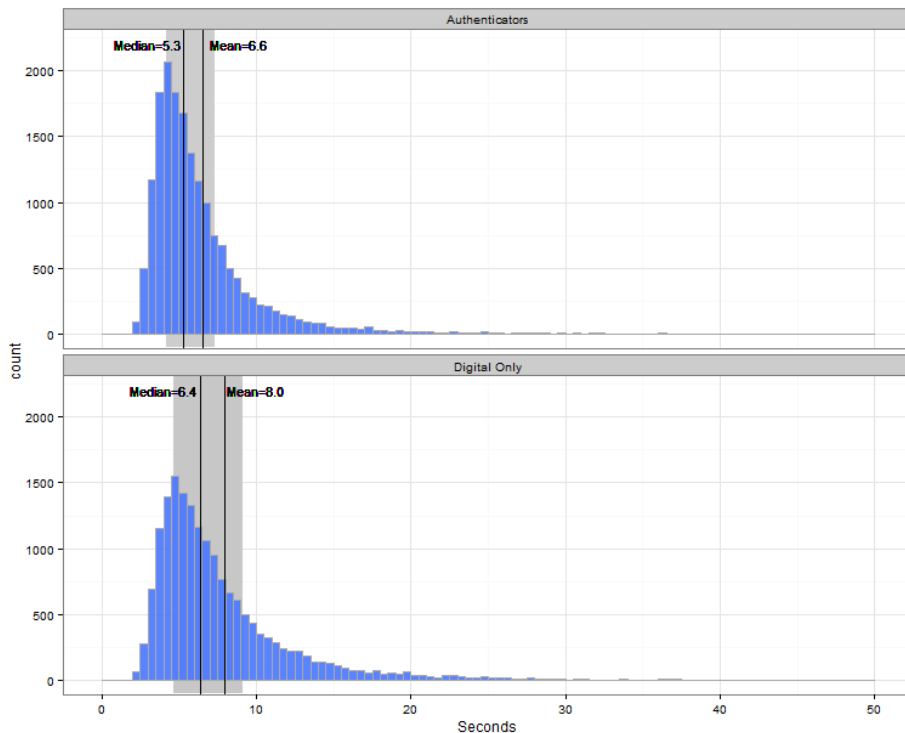
**MRI - Starch Digital - 44 Covered Titles, All Ads, 3/1/2013 to 7/8/2013; ** MRI - Ad Measure- Same 44 Covered Titles, All Ads, 3/1/2013 to 7/8/2013*

The Digital-Only audience includes those that either purchased a digital subscription OR purchased a single issue from a digital newsstand. These customers are not given access to the printed version of the same issue and therefore we capture, in theory, their full engagement with that issue.

When we look at engagement data by these audience types – we see significant differences in the average time spent with an issue and the average time spent with an ad. In 2013, the Digital-Only audience spent about 24% more time reading our digital issues than Print Authenticators.

Figure 4 below displays the distribution of average time spent with ads for the two audiences. Digital-Only subscribers demonstrate higher mean and median values (about 22% higher in mean, and 19% higher in median). Furthermore, while both distributions have similar shapes, the distribution of time spent for the digital-only audience is more spread out with a thicker right tail, showing higher variability and greater engagement with ads that generated over 10 seconds of exposure.

Figure 4. Distribution of Average Time Spent with Ads by Audience Type



Source Adobe Analytics; Time Inc. Tablet Database – December 2011-June 2013 Issues; Rectangular shape represents Interquartile range (q1 to q3).

Performance by Ad Type:

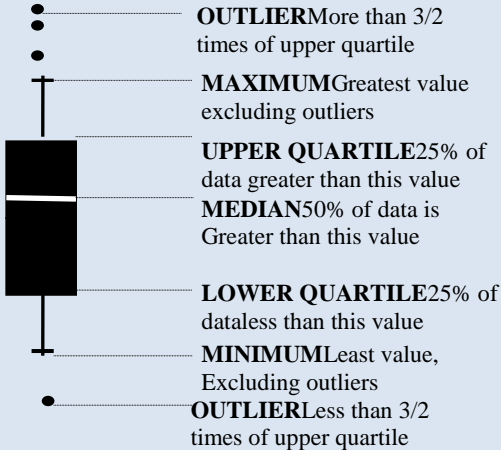
Time Inc advertisers have 3 options when it comes to ad format in digital editions:

- **Straight from Print (SFP):** Tablet issue ads where the page on the screen looks exactly like the print page. SFPs can have one active URL link to an external website.
- **Designed for Tablets (DFT):** Tablet issue ads designed specifically for reading on tablet devices. DFTs can have one active URL link to an external website.
- **Enhanced for Tablets (EFT):** Tablet issue ads with interactive features that take advantage of multi-media functionality. This may include video, photo galleries, hot spots, animation, social media, etc.

Introduction to Box-and-Whisker Plots

Box-and-Whisker Plots or Boxplots are great and simple way to show distributional characteristics of data and compare variables to each other beyond point estimates, such as average. Excluding outliers, a boxplot divides data into 4 equal quartile groups, where each group contains 25% of all data. When comparing variables to each other, with each variable represented by a boxplot, we are looking for the following:

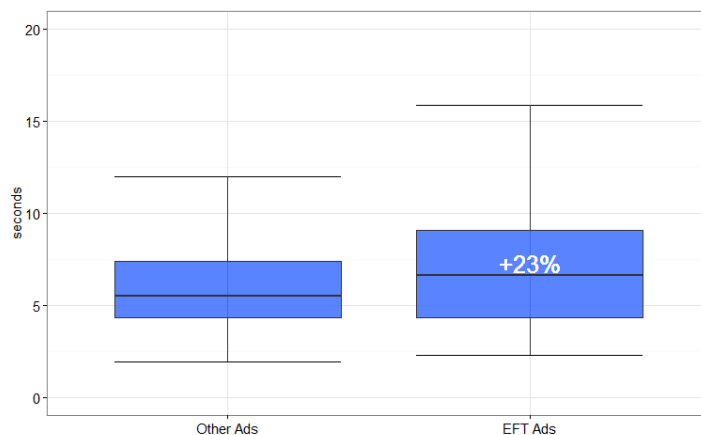
1. Length of boxplots: Shorter boxplots suggest less variability in data
2. One box plot is higher or lower than another: suggests a difference between the variables
3. Sections of the plot are uneven in height: indicates that distribution is not symmetric around its mean.



Source. Flowingdata.com

For the purposes of this analysis, we have combined SFP and DFT ads into one group since they have the similar levels of functionality, as compared to the EFT ads. In Figure 5 below, we have used boxplots to compare read engagement among EFT ads to Non-EFT ads. This chart clearly shows that EFTs outperform Non-EFTs. Not only are the median scores are higher, but scores in the upper quartile as well as maximum values, excluding outliers, are also higher.

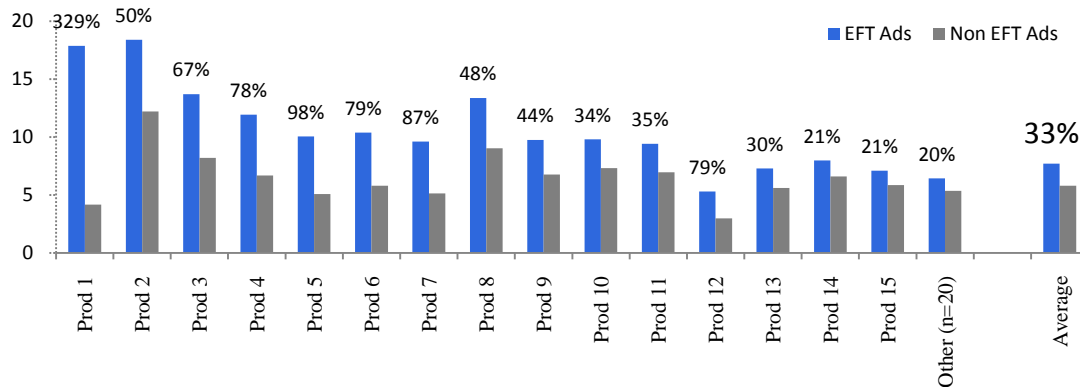
Figure 5. All EFTs vs ALL non EFTs, Dec 2011 - June 2013



Source Adobe Analytics; Time Inc. Tablet Database – December 2011-June 2013 Issues; Outliers removed.

To eliminate some of the Category/Brand bias in this analysis, we have restricted the universe to those advertisers that submitted an EFT and an SFP for the same “Product” as classified by Kantar. (Figure 6)With this more limited data set,EFTs showed a 33% lift in time spent with Ad.

Figure 6. Results of EFT/NON EFT Study: Time Spent with Ads by Ad Type



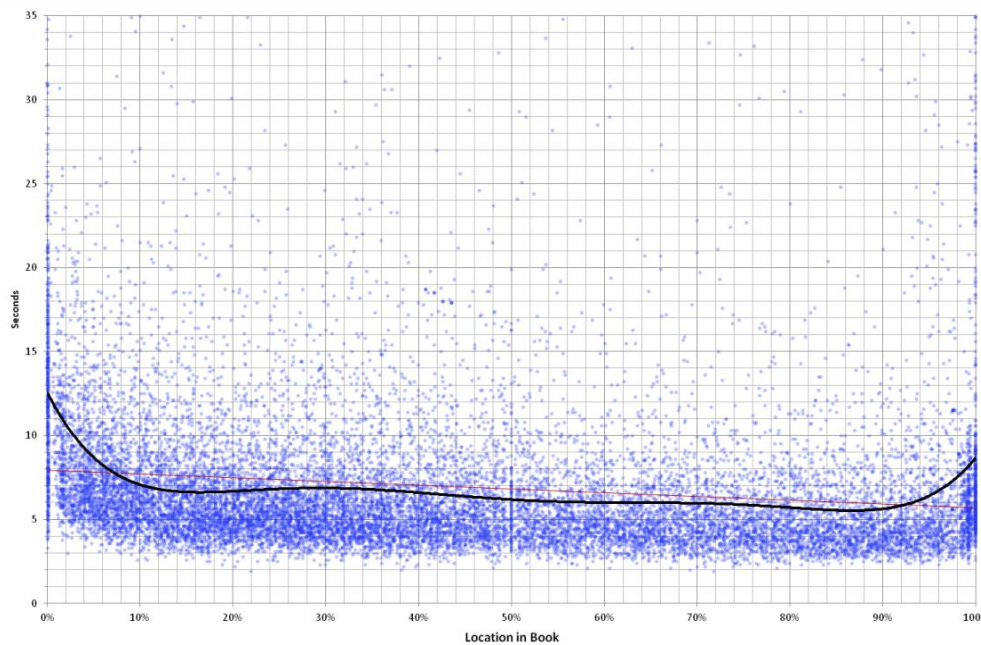
Source Adobe Analytics; Time Inc. Tablet Database – December 2011-Feb 2013 Issues; 35 products across all Time Inc. issues.

Performance by Position in “Book”

The running order of ads in Time Inc.’s digital issues is equivalent to the running order of ads in the printed version. While an advertisers may choose to opt-out of the digital issue for a variety of reasons (primarily legal/regulatory), Time Inc. makes every effort to ensure the positioning, adjacencies, competitive separation, etc is the same in the print & digital editions. This allows us to assign a “position in book” value based on Kantar’s Publishers Information Bureau (PIB) dataset.

The scatter plot in Figure 7 below shows the relationship between time spent with an ad and position in book. We can see that time spent with an ad for the key ad positions of Cover 2 (C2), Cover 3 (C3) and Cover 4 (C4) perform better than other ads in the book.

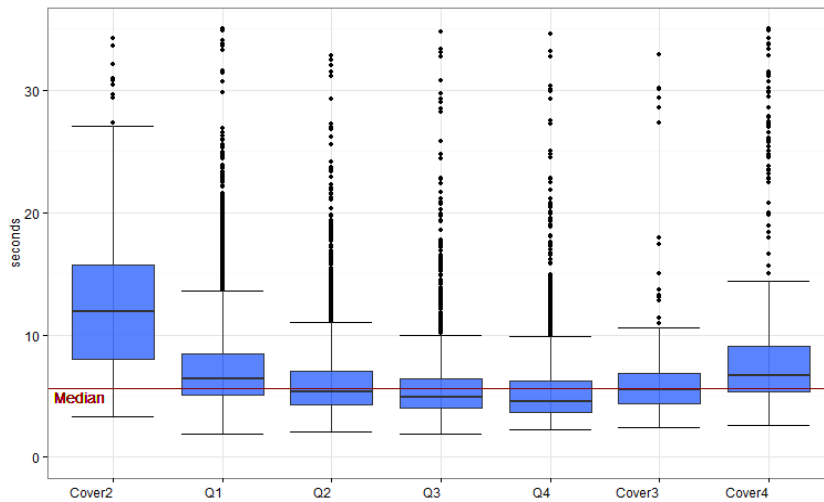
Figure 7. Time Spent with Ads by Position in Book



Source Adobe Analytics/Kantar PIB, Dec 2011-June 2013. N=17,645.

To look at this another way, we've examined the same data by quartiles, with C2, C3, C4, broken out separately. Figure 8 shows a marginal decline of 10%-15% in the median values for time spent with ads as you move from quartile 2 through quartiles 3 & 4. The chart also shows that Cover2 greatly outperforms all other positions in the book. Cover4 is the second strongest performer, while Cover3 outperforms other ads in the 3rd & 4th Quartiles.

Figure 8. Time Spent with Ads by Position in the Book – Grouped by Quartile and Key Ad Positions

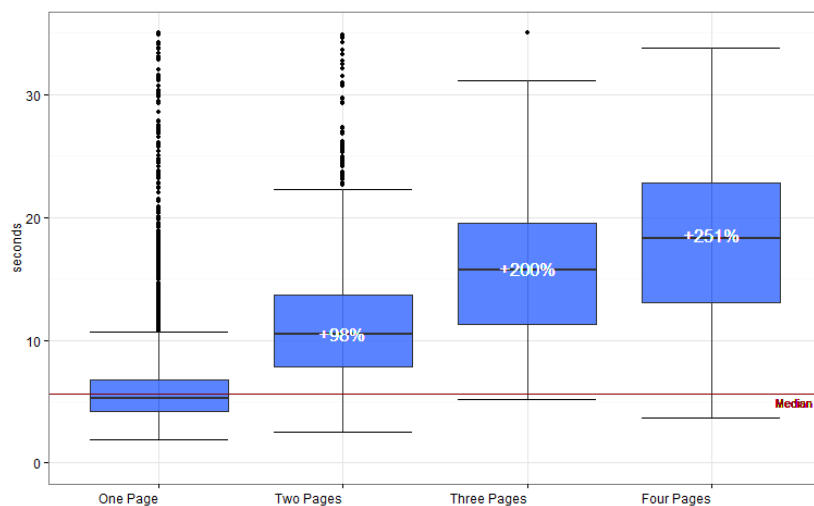


Source: Adobe Analytics/Kantar PIB, Dec 2011-June 2013. N=17,645.

Performance by National Edition Pages (NEP):

It is fairly safe to assume that each additional page of an ad will result in higher time spent with that ad. Assessing the lift empirically is one of the goals of this paper. Figure 9 below contains four boxplots – each summarizes the distribution of time spent for 1, 2, 3 and 4 page ads.

Figure 9. Distribution of Average Time Spent per Ad and NEP



Source: Adobe Analytics/Kantar PIB, Dec 2011-June 2013. N=16,527.

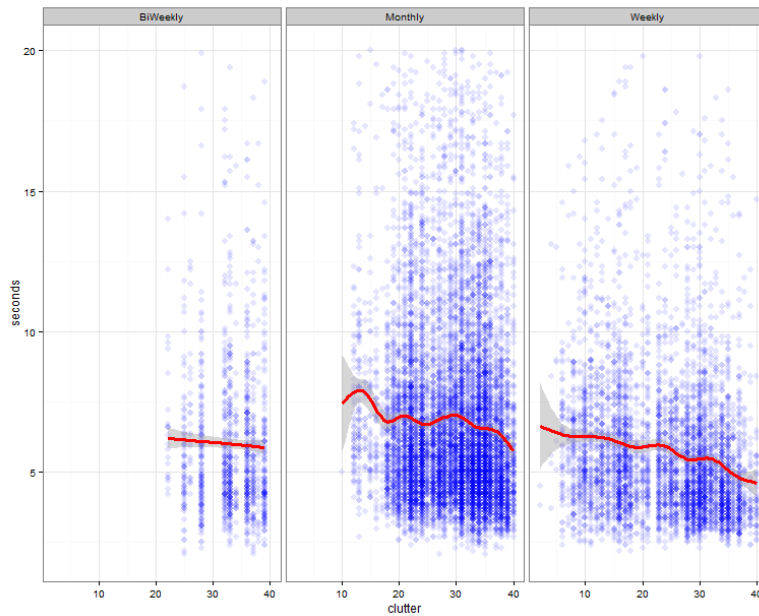
There is a significant increase in median time spent with ads with each additional page: median time with 2 page ads is almost double that of the median time spent with one page ads, and median time spent with 3 page ads is triple that of one page ads. However, while the accumulated time spent continues to increase for 4 page ads, we begin to see diminishing returns.

Impact of Ad Clutter on Ad Performance

For the purposes of this analysis ad clutter is defined as: $(\text{Number of Ads in an Issue}) / (\text{Number of Pages in an Issue}) * 100$.

In Figure 10 we use a locally weighted trend line (in red) to show that time spent with an ad decreases marginally as the clutter rate increases across weekly, bi-weekly and monthly titles. Special issues such as InStyleSept Issue, Sports Illustrated Swimsuit Issue, or Time Magazine Person of the Year are an exception to this finding. In these cases, even though clutter ratio increased compared to a standard issue, we observed no decrease in time spent with ads compared to the norms for that title. This may be due to the uniqueness of the content, which may counteract the negative effects of an increase in clutter, and something to be explored in future analyses.

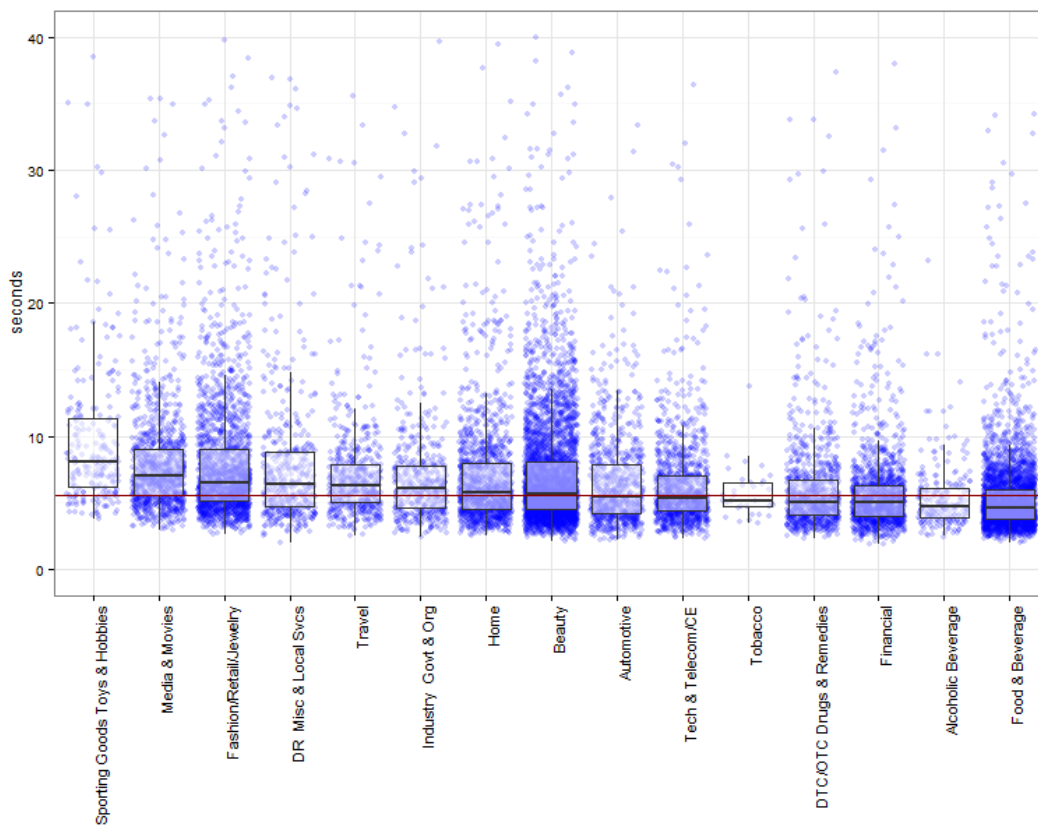
Figure 10. Time Spent with Ads by Clutter for Bi-Weekly, Monthly, and Weekly Titles



Source. Adobe Analytics/Kantar PIB, Dec 2011-June 2013. N=17,645.

Performance by Ad Category:

Figure 11 shows time spent scores for each individual ad, organized by ad category. Again this chart also includes a boxplots that helps to compare the median values, top and bottom quartiles, and variability for each category. This chart also helps to illustrate that while certain categories may under/over perform relative to a norm, there are examples in nearly every category of an ad that consumers engaged with for more than 20 seconds.

Figure 11. Distribution of Average Time Spent per Ad by Product Category

Source: Adobe Analytics/Kantar PIB, Dec 2011-June 2013. N=17,645.

Ad category has been included as a regressor variable in the multivariate model in Part 2 because it helps explain some of the variation in ad performance scores. On a more practical level, knowing that certain categories perform significantly better than others can help manage advertiser expectations and set more realistic performance goals.

RESULTS: PART 2.

Methodology for Fitting the Multivariate Model

The main objective of this paper was to gain deeper insight into key drivers of ad engagement and to quantify the effects of these factors. In the previous sections, we have examined individual relationships between average time spent with ads and selected ad and issue level variables that we believe to be significant engagement influencers. In this section, we have attempted to build a statistical regression model that allows us to test:

1. Whether the impact of these factors on ad engagement is statistically significant.
2. Estimate empirical effect of each of these factors on ad engagement, while accounting for all other factors.

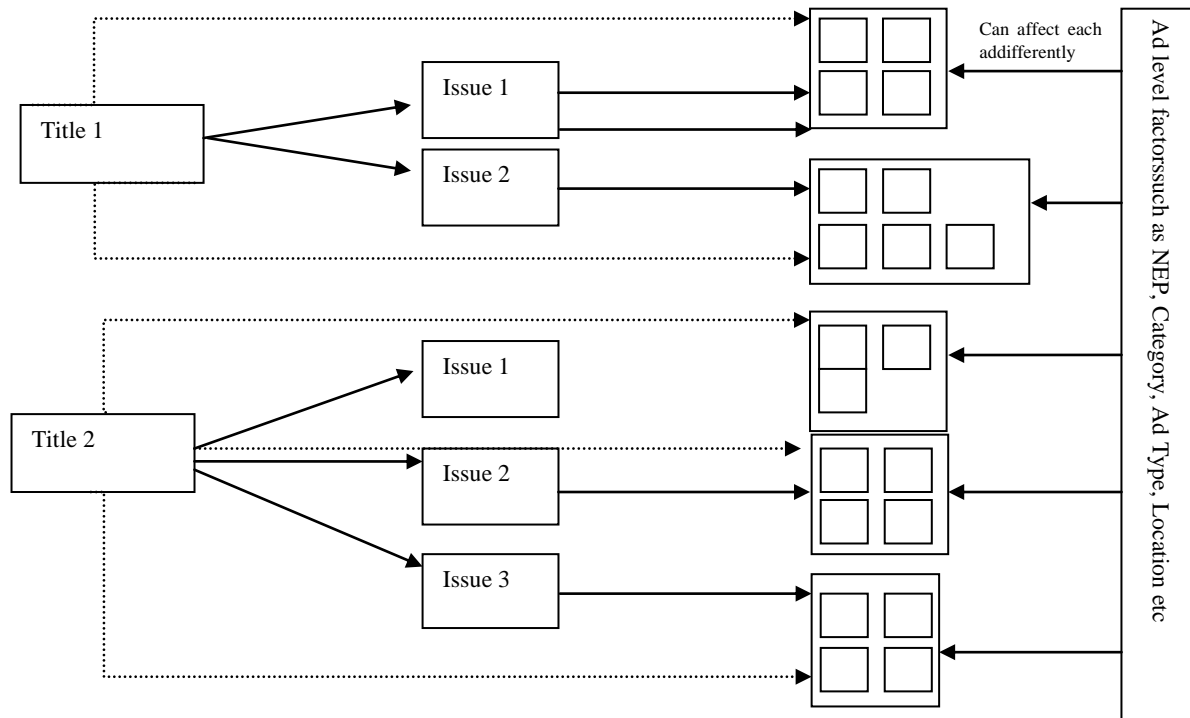
In other words, we would like to answer the following question: assuming that other factors stay constant, how would change in one factor impact ad engagement?

If we limit ourselves to traditional linear model analysis, we know that basic assumptions are linearity, normality, homoscedasticity, and independence. However, the structure of our dataset is hierarchical, where each observational unit is an ad that ran in a particular issue of a particular title. In Figure 12, each arrow represents potential impact of that group (title, issue, other factors) on ads within a single issue to show that performance of each ad can be affected by title and issue level variation as well as by ad level factors such as NEP, ad type, and location in the book.

With this type of data structure, it is somewhat safe to assume that observations will be correlated within each title and within each issue. That is, ads in the same issue of a particular title will be more similar than ads in other issues of other titles. For example, it is likely that ads that have appeared in the Sports Illustrated Swimsuit issue will share some common characteristics, both observed and unobserved, with ads that have ran in a regular weekly issue of Sports Illustrated. By the same token, ads that appear in all issues of Time Magazine will be more similar compared to ads that ran in Cooking Light. Thus, the nested structure of our dataset would lead to error non-independence and subsequent violation of assumptions (3) and (4) of the ordinary linear least squares model (Albright).

Figure 12. Dataset used in this section contains 518 issues and 16,535 ads. We limited data to at most 4 page ads and removed a few outliers.

Level 1- Titles Level 2 - Issues Observational Units –Ads



However, we can still make accurate inferences about our factors of interest and their quantitative effect on ad engagement by fitting a Mixed Effects model, where fixed effects represent our factors of interest, and random effects implicitly account for Issue and Title level variation in the average time spent and can be thought of as correlation structure parameters (Bryk&Raudenbush).

This model can be summarized as such:

$$y = X\beta + Zu + \epsilon$$

- y is a vector of observations, with mean $E(y) = X\beta$
- β is a vector of fixed effects
- u is a vector of random effects with mean $E(u) = 0$ and variance-covariance matrix $Var(u) = G$
- ϵ is a vector of IID random error terms with mean $E(\epsilon) = 0$ and variance $Var(\epsilon) = R$
- X and Z are matrices of regressors relating the observations to β and u

Where Fixed Effects Regressors are:

- (1) NEP (1,2,3,4)
- (2) Ad Category (15 categories)
- (3) Ad Type (EFT or Not EFT)
- (4) Location in the Book (Cover 2, Q1, Q2, Q3, Q4, Cover 3, Cover 4)
- (5) Clutter (numeric)
- (6) Issue Length (numeric)

And Random Effects or Multilevel specifiers are:

- (1) Title Indicators
- (2) Issue Indicators

And our outcome that measures Ad Engagement is:

$\text{Log}(\text{Average Time Spent per Ad})^1$

We fit this model for each audience type and for both audiences combined. We also limited the dataset to ads with at most 4 pages due to limited number of ads that had more than 4 pages.

Results of Fitting the Multivariate Regression Model

The results of fitting 3 models are displayed in the Table 1. R square values show that the Model I fitted for all tablet readers in the dataset explained about 45% variation in our measure of ad engagement. Models II and III fitted for each audience type showed similar coefficients of determination. Because the outcome variables have been log transformed, each estimated coefficient can be interpreted as percent increase in the geometric mean of average time spent with ads when other predictors in the models are held fixed. The percent increase reported in Table 1, is relative to the baseline group for each factor in the model. For example, NEP sections of the results should be interpreted as the following:

- Upgrading from a one page ad to a two page ad, will, on average, increase time spent with that ad by 72.1% among all tablet readers, while other factors in the model are held constant. The same upgrade would increase time spent with the ad by 75.0% among Digital-Only Readers.
- Upgrading from a one page ad to a three page ad, will, on average, increase time spent with that ad by 149.8% among all tablet readers. The same upgrade would increase time spent with the ad by 158.1% among Digital-Only readers.

¹We used logarithmic transformation to make highly skewed distribution of Average Time Spent per Ad less skewed to satisfy one of the assumptions of the model.

As can be seen from the table, NEP, location in the book, ad type groups, clutter, and issue length all tested to be statistically significant in all three models at $\alpha=0.05$, however it appears that impact of regressors on time spent with ads is higher for Digital-Only readers. Variability of Model III coefficient estimates measured by standard errors (se) was also slightly higher.

Table 1. Results of Fitting Mixed Effects Models

	Total Tablet Audience (I)		Authenticators (II)		Digital-Only (III)	
Selected Fixed Parameters:	Estimate (s.e) ²		Estimate (s.e)		Estimate (s.e)	
NEP						
<i>(Baseline: 1 page ads)</i>						
Two Pages	72.1%*	(0.9%)	71.3%*	(0.9%)	75.0%*	(1.0%)
Three Pages	149.8%*	(4.2%)	146.3%*	(4.2%)	158.1%*	(4.8%)
Four Pages	195.9%*	(3.4%)	193.5%*	(3.4%)	204.1%*	(3.9%)
Location in the book						
<i>(Baseline: Quartile 2)</i>						
Cover2	45.5%*	(1.8%)	43.7%*	(1.8%)	58.3%*	(2.0%)
Quartile 1	12.9%*	(0.7%)	12.5%*	(0.7%)	16.0%*	(0.8%)
Quartile 3	-7.7%*	(0.8%)	-7.6%*	(0.8%)	-7.9%*	(0.9%)
Quartile 4	-7.6%*	(0.8%)	-8.0%*	(0.8%)	-7.4%*	(1.0%)
Cover 3	5.8%*	(1.7%)	5.2%*	(1.7%)	4.4%*	(1.9%)
Cover 4	50.0%*	(1.8%)	47.1%*	(1.8%)	55.9%*	(2.0%)
Ad Type						
<i>(Baseline: Non EFT Ads)</i>						
EFT	10.7%*	(2.4%)	10.7%*	(2.4%)	15.1%*	(2.8%)
Clutter						
	-0.3%*	(0.1%)	-0.3%*	(0.1%)	-0.8%*	(0.1%)
Issue Length						
	-0.1%*	(0.0%)	-0.1%*	(0.0%)	-0.1%*	(0.0%)
Estimated Adjusted Rsq	0.45		0.44		0.44	

*Statistically significant at $\alpha=0.05$. Intercepts and estimated coefficients for selected factors are not reported for proprietary reasons. Source: Omniture, Kantar. $N=16,535$

Not surprisingly, out of all factors in the model, adding an additional page would increase the time spent with an ad the most. If all other factors are held constant, an increase from a one page ad to a two page ad would generate 79% more ad viewing time if we account for location, product category, at type and title/issue variation. As we increase NEP, we see the cumulative time spent increases, however the marginal impact of each incremental page added decreases.

Location in the book also had a statistically significant impact on ad engagement in the model. The most coveted positions in print, Cover2 and Cover 4, appear to be lucrative spots in tablet editions as well. While, on average, time spent with ads decreases only marginally between Q2 and either Q3 or Q4 (-7%), a move from Q3 or Q4 to Cover 4 would increase engagement for the same ad by 50% for all tablet readers and 55% for digital-only readers.

An upgrade to an EFT ad would on average generate 10% increase in ad engagement among all readers and 15% among the digital-only audience. It's important to note that EFTs are still relatively new to the advertising landscape and advertisers and publishers are just beginning to learn what features and formats drive consumer engagement & interaction. As best practices emerge, new interactive features become available, and advertisers push the creative boundaries, we should expect to see an even greater performance boost attributed to EFTs.

Clutter and issue length were both used in the model as continuous variables. Instead of a reference to a baseline group like we did for other factors used in the model, a coefficient estimate for these variables is interpreted as % increase in time spent if clutter or issue length is increased by one unit or one percent while other factors in the model are held constant. Clutter and issue length have shown to have a negative impact on ad engagement, however, while statistically significant, the empirical value of this impact is relatively small. For each percent increase in clutter, time spent with ads would, on average, decrease by only 0.3%, and for every page increase in issue length, time spent with ads would, on average, go down by 0.1%.

² Estimates are displayed as $(\exp(\beta_i)-1)*100\%$

Conclusions & Implications

Given the enormous change in the relatively short history of digital magazines –it's important to acknowledge that any conclusions taken from the current dataset need to take into account that:

- What is accurate and relevant today, *may* change tomorrow
- Results will likely change over time as the audience broadens, devices diversify and products evolve
- New insights will emerge as additional metrics and data are added to the analytic framework

At the outset, this was intended to be an initial examination of a unique, rich dataset – where we would explore possible measures of ad performance and identify key elements that drive differences in that performance. We recognize that this work is unfinished and may greatly benefit from future analysis into performance drivers such as ad attributes, creative quality scores, ad engagement rates, interactive features, etc. Having said that, and based on the dataset we have, we can confirm that:

- NEP, position in book, ad type, clutter, audience type, and ad category all contribute significantly to ad engagement, as measured by time spent with ad.
- The model offers an initial guide to the relative contributions from each of these key drivers, when all other factors are held constant.
- And most importantly – these factors should be considered when setting expectations for individual ad performance in digital editions.

It would be easy for a publisher to position these findings to recommend that advertisers maximize time spent with their ads by purchasing Cover 2, or upgrade their ad to an EFT or purchasing another ad page, or combine all 3. The data supports this recommendation.

However, the bigger takeaway is that we need to develop a meaningful framework, by which clients can set expectations and contextualize ad performance with a comparable normative dataset. Based on our analysis, it seems inappropriate to compare a single page SFP ad, in the below average performing ad category, that runs in the 4th quartile of the book, and determine the success of that ad by comparing it to average of time spent with all ads. As we continue to expand to our ad performance database, our normative comparisons can become increasingly tailored to each individual ad.

Appendix

Tablet Metrics Definitions

Metrics:

- Tablet Issue Readers: Total number of Tablets where the magazine was accessed at least once.
- Avg. Time Spent per Issue: Number of minutes tablet issue readers spend with a specific issue across reading sessions.
- Avg. Reading Sessions per Issue: Average number of times each tablet issue reader returns to a specific issue.
- Tablet Issue Readers per Ad: Total number of tablets where the Ad was seen at least once.
- Tablet Ad Impressions: Total number of times an Ad was viewed.
- Ad Impressions per Tablet Issue Reader: Number of times a tablet issue reader views a specific Ad page in a tablet issue.
- Avg. Time Spent with Ad: Average time spent with a specific ad, across reading sessions

Audiences:

- Digital-Only Audience: Single copies of digital magazine issue PLUS active Digital-Only Subscribers to a magazine.
- Authenticated Print Audience: Print subscribers who have signed up to receive Digital versions of the magazine in addition to their Print version.

Ad Type:

- Straight from Print (SFP): Tablet Issue Ads where the page on the screen looks exactly like the print page. SFP's can have one active URL link to an external website
- Designed for Tablets (DFT): Tablet Issue Ads designed specifically for reading on tablet devices. DFT's can have one active URL link to an external website
- Enhanced for Tablets (EFT): Tablet Issue Ads with interactive features that take advantage of multi-media app functionality to play rich media. This may include video, photo galleries, hot spots, animation, social media and external links.

Reporting Timeframe: “Onsale+4”

Each issue is measured over a time frame that equals the “On Sale” period, PLUS an additional 4 weeks to allow for audiences to accumulate. As soon as a new Issue becomes available, the Measured Issues is no longer “On Sale,” and the 4 week accumulation period begins. For example:

- For Weekly Titles the On Sale period is 1 week+4 weeks accumulation, for a total of 5 Weeks.
- For Monthly Titles, the On Sale period is approximately 4 weeks + 4 weeks accumulation, for a total of 8 weeks.

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