Conference Summary

Marketing on the Move: Understanding the Impact of Mobile on Consumer Behavior

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Marketing on the Move: Understanding the Impact of Mobile on Consumer Behavior

Prepared by Lijia (Karen) Xie

This conference, cosponsored with the Wharton Customer Analytics Initiative, featured pioneering work in mobile customer analytics and addressed mobile’s impact on traditional media consumption, the relationship between customer location and promotion effectiveness, mobile platforms as a tool for studying social networks, and new methods to protect mobile user privacy.

Introduction

No one can deny the explosive impact that mobile devices have had on consumers, managers, public policy officials, and other decision makers. This dramatic growth in mobile activities has led to a corresponding torrent of granular data that captures these behaviors. Whether mobile device users are communicating with others, consuming digital content, acquiring information, alerting others to their location, engaging in transactions, or posting content to be consumed by others, they are creating an “electronic trail” that lends itself to modeling and analysis that can ultimately lead to a better understanding of customers and more effective marketing.

MSI’s conference on “Marketing on the Move,” with the Wharton Customer Analytics Initiative, took place on February 27–28, 2012, at the Wharton School of the University of Pennsylvania. It featured presentations from practitioners who are pioneering the field of mobile customer analytics, as well as the latest research findings from faculty researchers who are measuring the impact of mobile on traditional media consumption, exploring the relationship between customer location and promotion effectiveness, using mobile platforms as a tool for studying social networks, and inventing new methods to protect mobile user privacy. A number of exciting new research questions and potential monetization opportunities emerged from the conference discussions.

Mobility in Its Strategic Context

Felix Oberholzer-Gee, Harvard University

Firms face three critical challenges when they seek to develop mobile marketing platforms and campaigns: What is the value proposition? What complements are needed? Who will capture the value?

Value proposition

What relevant messages should you bring to consumers? Can you create value for customers? Facebook, for example, has 483 million mean active daily users. However, the revenue per visit ($0.022) and profit per visit ($0.006) are trivial, compared to those of McDonald’s ($2.44 and $0.51, respectively). Companies that rely on Facebook in their marketing pushed to the Web and to phones a huge number of irrelevant messages. As a result, neither the companies nor Facebook captures significant value.
Complements
The impact of mobile marketing will depend on the quality of complements. A complement is a product or a service that enhances the demand for another product. A good example is Apple’s iTunes. Apple makes almost no money on its iTunes store, but iTunes creates strong demand for iPods, iPhones, and other electronics. Even better, in a world where content (i.e., music) is increasingly free, Apple profits from a surge in demand for its technology. A fall in the price of a complement further enhances demand.

Amazon’s e-reader Kindle provides another powerful illustration of the importance of complements. Sony offered a high-quality reader before Amazon did, but the Kindle outsold the Sony e-reader because of its embedded wireless service, a small complement that changed the reading behavior and consumption patterns of consumers.

Where complements are missing, mobile marketing campaigns will remain below their true potential. For example, a recent Calvin Klein Jeans campaign showcased a mobile bar code on a huge billboard at a noisy street corner in New York City. Passers-by snapped a picture of the mobile code and followed a YouTube link to an advertising video that built excitement with erotic footage and throbbing music. But on a noisy New York street corner, consumers who watched the video were unable to hear the music, robbing the video of much of its effect. In this example, a quiet environment is a complement that enhances the value of the ad.

Market power
Having developed a clear value proposition and put the necessary complements in place, marketers must also ask which parties will reap the benefits of mobile marketing. Will consumers be better off? Will mobile providers such as Verizon and AT&T capture most of the value? In thinking about market power in the emerging mobile landscape, it is critical to understand the influence of proprietary standards, network effects, and differences in price elasticity across the value chain. All of these will influence who captures the value that mobile marketing creates.

The Mobile Marketing Industry Panel
Moderator: John Deighton, Harvard Business School and MSI
Panelists: Maria Mandel Dunsche, AT&T AdWorks; Tim Reis, Google; and Fareena Sultan, Northeastern University

Five Big Bets: Where the Biggest, Most Powerful, and Far-reaching Opportunities Lie within the Next Three Years
Maria Mandel Dunsche, AT&T AdWorks

A survey of 300 media decision makers addressed the question, What are the biggest, most powerful, and far-reaching marketing opportunities during the next three years for mobile marketing?

Ability to target market. According to the survey, eight in 10 marketers believe that evolving mobile marketing will result in better targeting. Through mobile targeting, companies can get better information from consumers and reach them with targeted messages; consumers can get more types of ads they are interested in and get rid of things they are not interested in.

However, it is very difficult to effectively target consumers through mobile media. For example, you don’t have the same type of cookie-based tracking as you do in online, so most mobile targeting is done contextually.

Interactivity and engagement. Smartphones offer more interactivity, as Internet channels are now approachable on mobile devices. A variety of creative ad formats available today do better work in engaging customers. These include display (i.e., whether it is a mobile Web or app), sponsored messaging, or customer solutions (developing your QR codes).

Location-based targeting. Consumers bring the device wherever they are. Thus, marketers can
reach consumers at the right place at the right
time on the right device.

QR codes, RFID, mobile commerce, and couponing.
All of these are new and emerging mobile tech-
ologies that show tremendous promise and
revenue opportunities.

Mobile marketing trends
Mobile marketing focuses not only on smart-
phones but also on a wide range of smart
devices, including e-readers and tablets, which
will require a richer type of customer engage-
ment in a larger format.

Current mobile spending share primarily
concentrates on search and display. Less is
being spent on SMS/MMSP2P messaging,
and there is a move toward rich media,
including video. The app-like functionality of
rich media can reach a wide audience, with
higher use interaction, dynamic brand experi-
ences, and detailed engagement metrics.

Targeting is key. This includes demographic
targeting, geo-targeting, contextual relevance,
behavior, search information, etc. One area of
particular interest to AT&T as the carrier is the
use of subscription data, which is a fairly new
way of targeting in the mobile area. In an aggre-
gate anonymous fashion, AT&T is able to
create segmentation with actual subscriber data
and to match these segments to advertisers’
target audience. This offers a way to target
beyond the contextual and behavioral targeting.

Three case studies from AT&T
Levi’s store locator: When consumers click on a
Levi’s mobile ad, they are directed to the store
locator. Once they select “find a location near
me,” they essentially opt-in to allow Levi’s to
access the GPS function on their phone and
map the Levi’s location nearest to them. It
generated 50% engagement with over 10%
click-through from consumers to find the Levi’s
nearest to them.

Hewlett-Packard’s Shop Alert. Taking advantage
of the location sensitivity of the mobile device,
people were able to opt-in offers when they
were within the radius of the HP products.
Consumers were then directed to offers in
stores. Among those engaged, 5% responded
and went in to purchase the HP products.

Pampers text coupon. Instead of using specific
scanners to scan the mobile coupons in store,
AT&T used text messaging to have people text
in for the offer that will apply to their AT&T
cell bill. With 100 million subscribers, they
were able to create a mass way to do mobile
couponing.

How to GoMo in 2012
Tim Reis, Google

Optimize your site. While 40% of consumers will
abandon a bad site experience to visit a
competitor’s site, ~50% of large online adver-
tisers do not have a mobile-optimized landing
page. For example, TicketsNow saw a 30%
improvement in efficiency and 50% in conver-
sions by creating a mobile-optimized site.
1-800-flowers.com saw a 53% decrease in aban-
donment and a 25% increase in time spent after
improving their mobile site experience. Mobile-
optimized sites work!

Leverage local. Local is important. Customers
may want to know how many miles away from a
restaurant they are. A display unit on the mobile
will create a branding experience. One in three
mobile searches has a local intent; 90% of users
have searched for local information; 94% of
them acted on the information (called or visited
a store) within 24 hours. For example, The
Priceline Negotiator app lets you quickly find
and book a hotel room. How successful is it?
Here’s some data: 58% of users of this app
booked their room within 20 miles; a staggering
35% booked within one mile. And 82% booked
rooms less than a day before their arrival,
suggesting that app users had already reached
their destination and were relying on mobile for
real-time decision-making.

_Employ mobile at all points in the funnel._ Mobile works the entire funnel. It helps build awareness, audience engagement, and online and/or offline conversions. Ads across all screens are more effective in driving brand awareness. A Nielsen study conducted with Volvo shows that consumers have a 48% lift in brand awareness when they employ TV, PC video, phone video, and tablet video all together versus TV alone.

**Scorecard for going mobile (all the possible things to do).** This should include building a mobile-optimized site, breaking out mobile-only campaigns, mobile-specific ad copy, site links, click-to-call/call metrics, click-to-download, adequate budget, and leverage mobile display.

### Mobile Marketing: “Brand in the Hand”
*Fareena Sultan, Northeastern University*

Mobile marketing enables organizations to communicate and engage with their audience in an interactive and relevant manner through any mobile device or network. The uniqueness of mobile is its interactivity and location specificity. The convergence of mobile handsets and the Internet creates new opportunities for e-commerce and interactive marketing. Branding, mobile communications, and e-commerce can be delivered in the pocket, in the car, and in the hand.

_The mobile frontier is here and now._ U.S. wireless subscriber connections reached 322.8 million in 2011, and 31% of all U.S. households have only a wireless phone. In January 2012, U.S. smartphone usage was 48% of mobile phones. There were 400 different models of smartphones on the U.S. market at the end of 2011, with Android and iOS accounting for 75%. The annual U.S. wireless industry total revenue for 2011 was $164.6 billion, with $55.4 billion coming from data.

By 2015, mobile Internet usage in the U.S. will overtake PC Web usage. This means more people will access the Web through a mobile phone or a tablet than through a PC.

_When mobile meets advertising._ Total U.S. mobile ad revenue is $1.45 billion. Google leads in mobile advertising revenue with $750 million in 2011. U.S. revenue from ad-supported mobile content was $284 million in 2011 (20% of all mobile content revenue), which has been projected to grow to $1.08 billion in 2015. In particular, mobile advertising is expected to increase significantly for geo-targeting/location-based marketing.

_M-commerce is here!_ U.S. mobile commerce was worth $6.7 billion in 2011, including travel and event ticket sales but excluding digital downloads. U.S. mobile game revenue was $1.53 billion in 2011. As forecasted by the industry observers, U.S. mobile commerce will grow from 2% of all e-commerce sales in 2011 to 7% in 2015.

_U.S. mobile users’ behavior._ In 2011, an average U.S. adult spent 1 hour 5 minutes per day on their mobile phone, more than on reading magazines and newspapers combined. Of all Internet traffic in the U.S., 5.2% came from a mobile phone. Of U.S. mobile subscribers 74% sent a text message, 48% downloaded an app, 47% used mobile Internet, and 35% accessed a social networking site via a mobile phone.

_U.S. mobile shopping behavior._ In 2011, 14.6% of all online shopping traffic in the U.S. came from a mobile device, double from 2010. U.S. mobile shopper activity includes comparing prices online while shopping in a store (38%), browsing for products through mobile sites or apps (38%), reading online reviews for products (32%), searching for online coupons (24%), scanning a bar code to find additional product information (22%), using GPS capability to locate a store (18%), and purchasing merchandise or mobile content (22%).
**The global mobile penetration.** There were 6 billion global mobile phone users at the end of 2011, and global mobile app revenue in 2011 was $7.3 billion. Global mobile penetration is almost 90%, with growth greatest in emerging markets and developing countries.

Two questions to consider: What are the drivers of “brand in the hand” mobile marketing? What are the barriers to integration of mobile into cross-platform marketing strategies?

**Mobile Marketing Analytic Panel**  
**Moderator:** John Deighton, Harvard Business School and MSI  
**Panelists:** Peter Farago, Flurry, and Greg Dowling, Semphonic

**Peter Farago, Flurry**

Companies that track how consumers interact with mobile apps (anonymously and in aggregate) offer insights into consumer engagement and behavior.

On the consumer side, there are 480 million smart device active installed based worldwide in January 2012. Of these, 109 million customers are based in the U.S., with fast-growing trends in developing counties such as China and Argentina. In terms of the U.S. mobile app consumption, time spent per categories of mobile apps are 49% games, 30% social networking, 7% entertainment, 6% news, and 8% other. In terms of app retention, the data show a big drop-off in user retention in the first month post-acquisition for general iOS and Android apps.

On the supply side, available apps in the iTunes stores grow to 500,000 in October 2011 versus 350,000 in Android market in the U.S. market. Are apps cannibalizing the Web? People spend much more time in the mobile apps (94 minutes/day) than in Web browsing (72 minutes). Are apps cannibalizing television? Application session starts per second in the U.S. reached 4.5 thousand during the 2012 Super Bowl. In addition, while ad spending on mobile is still low (1%) compared to other media channels, it already accounts for 23% time spent by consumers, more than print (6%), Web (22%), and radio (9%), and second only to TV (40%).

**Greg Dowling, Semphonic**

Mobile app optimization should include strategic considerations. How does mobile app usage compare to fixed Web or mobile Web? Which campaigns are most effective at driving app downloads and repeat usage? Which types of engagement patterns maximize customer lifetime value?

Mobile app metrics include reach (number of customers), frequency (how often app is used), intensity (active engagement), duration (length of active use), and monetization (return on development investment).

A full picture should include key metrics of total downloads, app revenue (including trial to paid upgrades), number of unique app users, number of first-time users, ratio of app users to total users/active users, acquisition/retention, time spent in app or on task, and number of screens viewed.

Mobile applications should include trigger-specific events that push out time- and session-based data to the measurement infrastructure. The key events include install (on first run after installation), upgrade (on first run after upgrade), engaged user (daily/monthly), launch (any run that is not install or upgrade), background (on set and on return to focus), offline view (screen view while offline, i.e., cached), orientation (rotation of device portrait/landscape), and crash (any exit not triggered by “quit”).
Key variables include the following: date of first launch after install; application name and version number; days used in last week, month, lifetime; days since install, last use, upgrade; number of times launched, brought out of background, or since upgrade; complete timestamp; current operating system version number; and device, country, carrier, WiFi.

**What Is the Value of Physical Distance on the Mobile Internet?**

Martin Spann, LMU Munich

Location-based services may fundamentally transform consumers’ search and purchase processes. Location-based services bring customers to the store, since they see relevant offers on their app and may take a detour for the offer. However, consumers may go into the store, scan the code, and scan reviews and prices at other nearby stores. Would a customer walk four hundred meters to get a discounted price at another store? What types of price/location trade-off are consumers willing to accept?

The aim of the study was to analyze the impact of location-based services on consumer behavior in a mobile advertising context. The question is, What is the value of physical distance on the mobile Internet? Further, which factors impact choice of location-based coupons? This study used rich observed behavior data to analyze these questions.

The study collected data of a location-based coupon app. The app provides information on coupon offerings sorted by distances between the current position of the user and the store. In the app, consumers can first click on an offering to receive more information on the coupon (“information stage”) and second click to get a coupon code (“redemption stage”).

Overall, the data include more than 900 different coupon campaigns, more than 147,900 logins, more than 17,300 clicks on coupon profile (i.e., information stage), more than 6,100 clicks on coupon redemption code (i.e., redemption stage), and more than 31,000 different users.

A fixed-effects sequential logit model was used to examine effects on consumers’ choice to redeem location-based coupons. The fixed effect was to account for the heterogeneity at customer-level. Dependent variables were binary choice to learn about (information stage) and to redeem (redemption stage) location-based coupons. Independent variables included distance between user and point-of-sale measured in kilometers (based on GPS data), coupon attributes such as face value and display rank, time of the day, and coupon category.

The results showed that distance has a significant negative impact on the probability to learn about and to choose to redeem coupons. Face value has a significant positive impact on the probability to learn about and to choose to redeem coupons. Time of the day has a significant impact on the probability to learn about and to choose to redeem coupons in both stages. For example, coupons for coffee are more likely to be redeemed in the afternoon. Regarding the trade-off between distance and face value, a one percent increase of the face value has the same impact as a reduced distance of 104 meters on the probability to choose to redeem mobile coupons.

Location-based promotions are a promising customer acquisition tool, since offers in close vicinity have potentially high relevance for consumers. Location-based services also generate new (geo-) data for marketers, which can help better identify consumer preferences and facilitate more precise targeting.
The Hidden Dangers of Using Aggregate Data to Develop Mobile Marketing Strategies to Reach Consumers  
Rafael Alcaraz, Ph.D., The Hershey Company  

The use of mobile technology in the consumer packaged goods industry has increased significantly in the past five years, adding a layer of complexity to the marketing researchers’ task. Although point-of-sale data have become more accessible, these data do not represent the individual characteristics necessary to successfully segment and target consumers at a granular level. Frequent shopper data have become more prominent, and retailers across industries are now collecting their own shopper information. The question is, Are we flocking into the mobile space without knowing what the returns are going to be?

A masked analysis demonstrates that insights based on aggregate point-of-sale data may lead to a significantly different mobile marketing strategy than insights obtained from mining frequent shopper data.

In this study, three years of data include 240 million records of transaction data in 200+ locations, including 150 thousand loyalty card members, 44 item categories, and 10 thousand UPCs. Data are segmented into frequent loyalty shoppers, moderate shoppers, and infrequent shoppers. Only 3–5% of the customers gave aggregate point-of-sale data.

In packaged goods, beverage, tobacco, and food were found to dominate the item categories of store visits across three segments. The importance of item across three segments was significantly different. Combined items into five bundles based on purchase frequency allowed retailers to target more selectively.

In addition, each segment should be treated differently: incentivize more moderate shoppers and motivate higher redemption of frequent shoppers and reward their loyalty. Most participants in this study said the mobile coupons distributed by the stores should be customized.

Assessing the Effectiveness of Mobile Phone Promotions  
Peter Danaher, Monash University  

The purpose of the study was to determine the likelihood of uptake for mobile phone coupons. A start-up interactive media company in Melbourne, Australia, conducted a two-year trial in a shopping mall in which about 5,500 people were recruited to have an RFID tag attached to their mobile phone. They opted-in to receive three SMS coupons whenever they “swiped” their mobile phone at the mall entrances. Over 150,000 promotional messages were delivered during the trial, comprising 40 stores spread over three floors that generated 136 different SMS coupons.

Usage and demographics  
The number of panelist swipes peaked within a few months but dwindled over time. Time between swipes steadily declined within a 1–100 day observation window. Only 61% of panelists supplied demographic information (67% female, 33% male). Redemption rates did not vary much across gender. Older panelists had more total swipes than younger, but they redeemed less. The overall total swipes were 8.3, and the redemption rate was 1.13%. As the days until coupon expirations grew closer, the probability that panelists would redeem the coupons grew.

Study model  
The model used in this study was a multivariate probit model for coupon redemption. The estimation method was Bayesian MCMC with 10,000 burn-ins and 20,000 collection iterations. Results showed that multiple redemptions happened very rarely. The total number of coupons in a set of three is 44,901. However, 43,399 coupons were redeemed zero times, 1,474 once, 27 twice, and only 1 three times.
Findings
Distance between the store and the redemption point has a negative coefficient, indicating the farther the store is, the less likely the panelist is to redeem. If the level difference between the store and the redemption point is zero (the store and the redemption point is at the same floor), the more likely the panelist is to redeem. Both results indicate consumers are “lazy.”

On coupon format, the bigger the discount, the more likely the panelist is to redeem. Other coupon attributes such as expiration length, dollar discount, and percent discount do not have a significant relationship with the coupon redemption. In terms of the redemption history, swipe frequency, prior redemption times, and time on panel in days all have negative coefficients. Among all product categories, snack food tends to drive the coupon redemption, whereas shoes do not. Panelists tend to redeem more during the morning than afternoon and on Mondays rather than Thursdays.

For policy simulations, the model is able to show the redemption outcome for changes in covariates. In this study, the baseline redemption rate is 0.92%. Increasing the discount by 10% leads to a 1.24% increase in the redemption rate. If the distance to the store is halved, the redemption rate increases by 1.02%. Using only BOGOF coupon pricing leads to a 1.23% increase in redemption. Finally, delivering only snack food coupons seems to be the most effective strategy, driving the redemption rate up by 2.83%.

There is only about a 1% redemption rate for the coupons. However, many of the covariates are significant, showing, for example, that snack food promotions are much more successful than men’s clothing. Items of low value, such as milk-shakes and pancakes, have much higher redemption rates than shoes and women’s hair-dressing. Bigger discounts get higher redemption rates, and “2 for 1” offers do much better than percentage or dollar discounts. Lastly, there are large heterogeneity effects, with previous redeemers being much more likely to redeem in the future (people we term “promo junkies”).

A more robust model is needed to deal with possible endogeneity issues. It would also be interesting to develop a supply-side model for dispensing coupons and a strategy for optimal coupon delivery that works in real time.

Geo-Social Targeting for Privacy-Friendly Mobile Advertising
David Martens, University of Antwerp

This study combined the predictive power of social network data and the targeting potential of mobile customer data in a geo-social network, or GSN. The design is intended to identify devices that belong to the same user or to different, but similar, users. The basic idea is that two devices are similar, and thereby connected, in the geo-social network, when they share at least one visited location (e.g., an IP address). They are more similar as they visit more shared locations. Various analytical applications were put forward, such as targeting advertisements to mobile devices in a manner that is both effective and privacy-friendly. The study looked at some real-life location data using mobile check-ins from Real Time Bidding (RTB) environments. One week of RTB data across 24 websites yielded 100 million records/day.

Two questions were asked: Are we able to identify the same user on multiple devices within the GSN? Is there any similarity in the geo-social cohorts’ behavior, specifically, website-browsing behavior?

To address the first question, several methods were used to identify the user for the same device. The results show to what extent the user is connected to itself in the defined GSN and how strongly the same user is connected to itself. A probability model can be used to
On the second question regarding similarities in website browsing behavior, prior research has shown that website visit is a proxy for brand affinity. A study of 100 neighborhoods shows that the GSN neighbors of visitors to a wide variety of websites are substantially more likely also to visit those same websites. Highly similar GSN neighbors show very substantial lift. The results indicate that mobile devices that are network neighbors are indeed similar in terms of browsing behavior, and closer neighbors are even more similar. Reasons for this good performance include the ability to connect soul-mates (similar users visiting the same locations), many screens (same user on different devices), and multiple identities (same user on same device with different IDs).

The findings offer useful potential for GSN targeting, including computing GSN similarities for targeting, entity resolution, cross-channel campaign evaluation, and hyper-local targeting.

The Intersection of Mobile and Gaming: Now Everyone’s a Gamer
Matt Spiegel, Tap.me

Mobile devices are much more than a utility device; they are also becoming the dominant solution for gaming. Women are the majority of the total mobile social gamers in the U.S. Most gamers are between the ages of 18–44. Game apps are most used on mobile, with 64% app downloaders in the U.S. Games matter on tablets, too: 58% of the activities of U.S. tablet users are games. All these provide evidence of the potential of games as a massive media.

While gaming is increasingly important to mobile marketing, this is not reflected in advertising spend. Innovations in advertising placements can rapidly increase marketer adoption of game-based advertising. For example, ads can match game play. For example, Zynga tested “reward advertising” in CityVille.

Players were exposed to the ads when they ran low on energy. By developing game content that matches the brand, the game developers bring in the ad revenue that is also positive to the game experience.

There are several new areas for data exploration. These include impact on game-play time/frequency from advertising, impact of game genre on reactions to/interactions with advertising, “gamer segmentation” and influence on virtual goods and advertising, and incentive preferences (in game vs. real world, etc.) by gamer segment.

Mobile Marketing: The Persuasive Impact of Real-Time Reviews
Sam Ransbotham, Boston College

We talk about the consumption of mobile content, but mobile is also about creation. Consumers use mobile devices not only to search for information and make purchases but to communicate their product and service experiences to others in real time. Despite their growing prevalence, little is known about mobile reviews.

This study compared reviews written using mobile devices with those written on traditional desktop computers. The questions were, How do they differ in content? How do they differ in influence? What mechanisms drive differences?

A total of 299,798 restaurant reviews were analyzed. Users were able to read and write restaurant reviews with little governance. For each review, the study tracked user, restaurant, date, title, text, mobile/desktop, recommend, and “likes” by other users. These evaluations were compared in order to understand differences in the content created on these platforms and in their relative influence. Specifically, text mining used Linguistic Inquiry and Word Count with 2007 dictionaries. This approach,
developed by Pennebaker, Booth, and Francis (http://www.liwc.net), is used in text analysis research, often with transcription. Based on word usage, it typically categorizes about 86% of words used.

Major categories include linguistic processes (26 measures), psychological processes (32 measures), personal concerns (7 measures), and spoken categories (3 measures), for a total of 68 measures, many of which were highly correlated. This study focused on 11 measures.

Results

- Word counts for desktops were higher than those of mobile.
- Complexity of wording on mobile was slightly higher than on desktop.
- Users on mobile tended to use less past tense in their reviews than on desktop.
- Reviews on desktop tended to be less self-oriented, and reviews on mobile included slightly less social wording such as “my family,” “they,” “friends.”
- There was more positive emotion in mobile reviews than in desktop reviews.
- Both mobile and desktop were associated with little anger and few swear words.
- Reviews on mobile were less cognitive (such as “I believe,” “I think”) and more perceptive (such as “I feel”).

The study used ordered logistic regression (Bayesian) on the rating (dislike, neutral, like, really like) using 48,610 observations of 4,499 users with at least one mobile and one desktop review of 5,000 iterations. The results suggested that mobile reviews were more likely negative than non-mobile reviews.

The study further conducted negative binomial regression on the number of users who like the review, using 48,610 observations of 4,499 users, with at least one mobile and one desktop review (additional controls for age, time, intercept). The results provide evidence that users are less influenced by mobile reviews than by desktop reviews.

Overall, the results indicate that, because of its physical and temporal nature, reviews on mobile tend to be shorter, no less complex; have more positive emotion; were closer to real-time; were surprisingly not negative in terms of anger; were less cognitive (slightly) and more perceptive; and more likely to be negative. In addition, reviews on mobile were less likely to influence users even after controlling for all things “mobile”—i.e., shorter length, etc.

What mechanisms drive differences? The underlying reasons may include review characteristics (page placement), endogenous choice of real-time (only if extreme?), use of “likes” as measure of influence (same as behavior?). Only using the secondary data may not suffice to address this question.

In a scenario-based experiment, participants were given the scenario “Imagine that you are picking a restaurant for tonight.” A 2 × 2 design (mobile versus desktop and positive versus negative) is used. After reading the same reviews, ostensibly from different sources, participants were required to rate credibility, valence, similarity, influence, and timing of each review. Mobile was much less useful in negative reviews while almost the same as desktop for positive reviews. Mobile was less credible in negative reviews and slightly more credible in positive reviews.

Embracing the Mobile Consumer

Josh Palau, Comcast Cable

With the influx of tablets and smartphones, consumers demand ubiquitous access to information. Mobile search has outpaced desktop. In order to meet that demand, companies cannot simply copy their desktop strategy, but must think multiscreen. However, only 33% of companies have a mobile-enabled site.
Comcast has leveraged both internal and market data to identify this opportunity and develop an experience to meet this demand. Comcast’s strategy of multiscreen experience is anchored on three aspects: entrance, help, and sales.

**Entrance.** Comcast and Xfinity understand that customers want to do a lot of things on mobile. Thus they provide multi-functional apps for smartphones. For example, the Xfinity TV app allows people to watch movies and shows on their smart devices.

**Help.** Formerly, when people moved to a place without Comcast service, they had to find information on the “Help and Service” tab on Comcast websites and call for technicians to come. Now, Comcast’s service of text messages gives answers to consumers’ questions. By doing so, Comcast enables the mobile channel to help and support consumers when facing technical problems.

**Sales.** Comcast developed a page with information about products; consumers talk to Comcast via clicking a call button on that page. A specific call center at Comcast only answers mobile calls so they have a specific understanding of what the customers want and the deals Comcast offers through the mobile devices. This program is simple but quite efficient in driving sales of the products on mobile. Now mobile drives 10% of the online connects for Comcast with that page of information.