Mobile Shopper Marketing: Key Issues, Current Insights, and Future Research Avenues☆

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Abstract

The intersection of mobile marketing and shopper marketing, known as mobile shopper marketing, is a rapidly evolving area. We formally define mobile shopper marketing as the planning and execution of all mobile-based marketing activities that influence a shopper along and beyond the path-to-purchase: from the initial shopping trigger, to the purchase, consumption, repurchase, and recommendation stages. However, not much is known about mobile shopper marketing. We plug this gap by first discussing mobile shopper marketing and its scope in depth and then presenting a process model that connects the mobile shopping journey with four key entities, i.e., shopper, employee, organization, and mobile technology. For each of these themes, we identify the challenges that offer future research opportunities.
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Introduction

Shoppers' use of mobile, which typically refers to a mobile device, medium, technology, or channel, is growing at a tremendous pace. More than four-fifths of U.S. shoppers use a mobile device to shop even within a store (Google M/A/R/C Study 2013).

Mobile adoption is truly global. Mobile devices are so ubiquitous that there are more people with mobile devices than there are with toothbrushes in the world (MMA Asia 2011). Mobile broadband is more pervasive than fixed broadband around the world and much of the surge in mobile usage emanates from emerging markets like China and India, which together account for roughly one-third of mobile handsets worldwide (mobiforge.com).

In response to these trends, marketers are increasingly using mobile to meet the demands of mobile shoppers. Firms' spending on mobile is now about one-fourth of all of their digital spending, and mobile will constitute about 22% of digital revenues in 2015 (eMarketer 2015). Over three-fourths of retailers plan to enhance their mobile marketing spending from 2015 onward (eMarketer 2015).

While the use of mobile in marketing practice is growing dramatically, research on this topic is evolving gradually. Thus far, it has focused on issues such as the scope of mobile marketing (Shankar and Balasubramanian 2009), mobile service delivery (Kleijnen, De Ruyter, and Wetzels 2007), mobile interface usage and usability (Venkatesh, Thong, and Xu 2012), mobile browsing experience (Adipat, Zhang, and Zhou 2011), applications to retailing (Shankar et al. 2010), interfaces for mobile devices

(Brasel and Gips 2014), mobile app demand (Garg and Telang 2013), mobile shopping carts (Van Ittersum et al. 2013), mobile advertising and promotions (Andrews et al. 2015; Bart, Stephen, and Sarvary 2014; Fong, Fang, and Luo 2015), and mobile shopping (Wang, Malthouse, and Krishnamurthi 2015).

At the same time, shopper marketing is growing by leaps and bounds (Shankar 2011, 2014). Shopper marketing describes the planning and execution of all marketing activities that influence a shopper along and beyond the path-to-purchase (Shankar 2011, 2014). A shopper differs from a consumer in that an individual could purchase for consumption by others (e.g., an adult buying for kids) and that a shopper typically is in a shopping mode rather than consuming mode as is the case with a consumer. Specifically, a shopper is in a setting that facilitates purchase decisions, or is in a mindset to shop for items or products, whereas a consumer could be in any environment facilitating not just purchase but also consumption or disposal.

Research on shopper marketing, however, is sparse, and existing consumer research does not fully address the gamut of stages a shopper goes through in the shopping cycle. Shopper marketing focuses on all stages, including outside store activities such as interactions with the brand, store, and/or other shoppers before and after store visit, in both the offline and online context (Shankar et al. 2011).

The intersection of mobile marketing and shopper marketing, known as mobile shopper marketing, is a rapidly evolving area. Despite shoppers' prolific use of mobile and marketers' shift of resources toward mobile marketing, not much is known about the integration of mobile into the shopper funnel. We formally define mobile shopper marketing as the planning and execution of mobile-based marketing activities that influence a shopper along and beyond the path-to-purchase: from a shopping trigger, to purchase, consumption, repurchase, and recommendation stages. To provide deeper insights into mobile shopper marketing, we discuss critical issues in mobile shopper marketing from the perspectives of four key entities: shopper, employee, organization, and mobile technology. Before doing so, we first elaborate on the scope of mobile shopper marketing.

Scope of Mobile Shopper Marketing

In its most general sense, mobile encompasses several aspects, including device, medium, technology, and channel. Device refers to the equipment such as smartphone, tablet and laptop. Medium refers to the means of communication such as app, email, and print. Technology refers to the hardware and software behind communication such as fixed broadband and wireless broadband. Channel refers to the mode of transaction such as mobile, desktop, telephone, and physical store.

In its broadest form, shopper marketing covers the gamut of shopper activities from shopping motivation to post-purchase and includes both in-store and outside store activities. Therefore, we focus on mobile-based shopping activities in general but do not deal deeply with mobile advertising, mobile promotions, mobile channels, or mobile gaming. For an overview and deeper discussion of mobile advertising and mobile promotions, refer to Grewal et al. (2016) and Andrews et al. (2016), respectively. Similarly, for a comprehensive treatment on mobile gaming, see Hofacker et al. (2016).

From a device perspective, mobile can be seen as any centrally connected portable device that can be used in motion. Such a device ranges from a cellphone to a tablet. A mobile device helps customers perform a number of activities and make decisions on the move. Most users would feel lost without them. Mobile devices allow shoppers to use multiple apps, surf the web, and use audiovisual features such as talking and viewing.

From a technology standpoint, mobile enables the delivery of contextually relevant information (e.g., location, time, speed of travel, date events, and weather) to shoppers. From a medium viewpoint, firms can use mobile to view and hear shoppers' voices and manage customer relationships. In terms of being a channel, mobile offers shoppers' transaction data to firms, enabling them to analyze and predict shoppers' needs and wants. At the highest level, mobile is an integral part of a firm's overall marketing strategy, and in particular, its SMACIT (Social, Mobile, Analytics, Cloud, and Internet of Things) strategy. In a growing number of organizations, the SMACIT strategy is gaining prominence because these elements are interrelated and are fast becoming a significant part of organizations' digital transformation (Ross 2014).

The influence of mobile on shopping extends well beyond in-store use of mobile devices. It affects every stage in the shopping cycle of not just the shopper but also his/her social circle. The implications of mobile marketing extend far beyond the physical store. It involves all the planning and execution steps of marketing activities. The shopping journey is also circular, which means it does not have a starting or ending point (Walker 2011). Rather, it is a cycle that shoppers can join or leave at any point, and mobile marketing can influence any of these points in the shopping cycle.

One way to analyze the scope of mobile in the shopping cycle is to split it into three broad stages: before purchase, during purchase, and after purchase. Shoppers, employees, and organizations (retailers, manufacturers, and service providers) face a number of critical issues relating to mobile shopper marketing across the different stages in the shopping cycle. Underlying the roles of different stakeholders is also the mobile technology itself, as changes in mobile technology directly or indirectly affect the role of mobile in the behavior of shoppers, employees, and organizations. An organizing framework based on these entities and stages appears in Fig. 1.

The remaining sections develop research question in relation to the four themes represented in Fig. 1: the shopper, the employee, the organization, and mobile technology (see also Table 1). Under shopper-related mobile issues, we discuss shopper motivation/goals, search, discovery, evaluation, consideration, choice, and post-purchase. Under employee-related mobile issues, we cover employee roles, metrics and incentives. Under organization-related mobile issues, we elaborate on data-related, resource allocation, and spending issues. Finally, under mobile technology related issues, we discuss convergence and wearables, two important future issues.
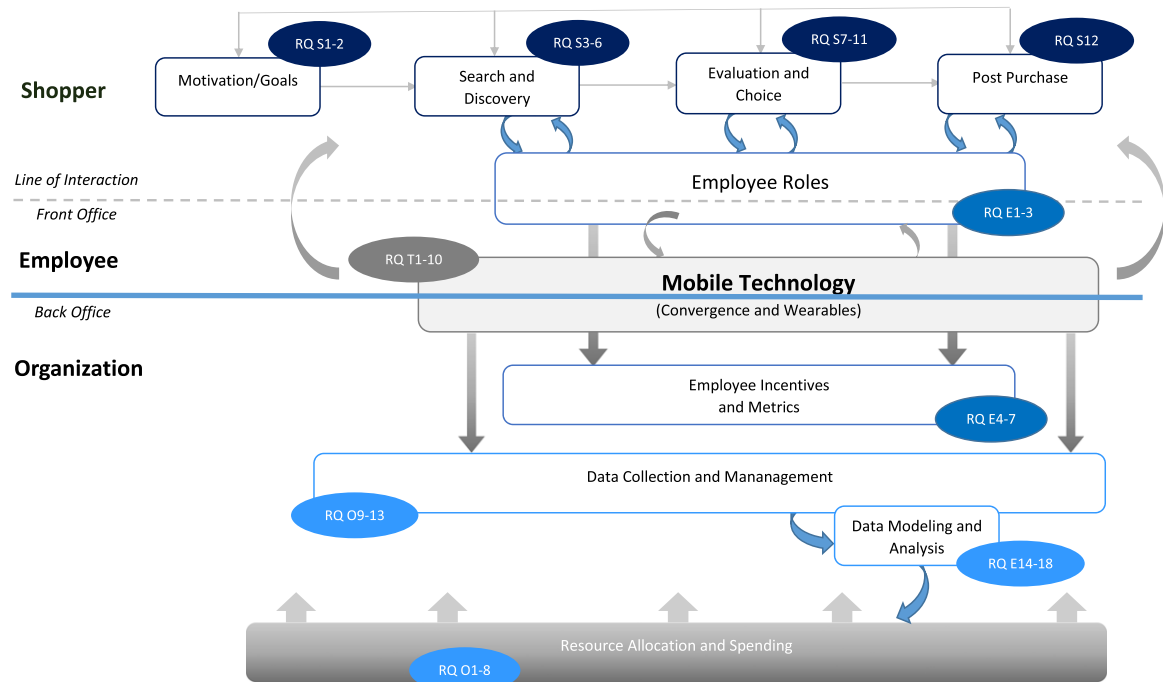
Fig. 1. Mobile shopper journey and research questions.

Shopper-related Mobile Issues

Shopper Motivation/Goals

Traditional models of shopper marketing assume that shoppers come into the store with a particular goal in mind and shop according to that goal. Based on the goal, shoppers may be classified as convenience shoppers, variety-seekers, balanced buyers, and store-oriented shoppers (Rohm and Swaminathan 2004). Shopping goals can be classified as utilitarian or functional (e.g., purchasing products in a timely or efficient manner) versus hedonic or experiential (e.g., shopping for the fun or the adventure elements (Babin, Darden, and Griffin 1994; Sherry 1990). Social affiliation could also be another goal category as use and gratification theory suggests (Lariviere et al. 2013b). For example, a shopper could post a selfie of her with a new apparel and post it for viewing by her social circle, enabling her to express her identity. Furthermore, some of these goals are conscious and people may be aware of their influence, whereas others may be habitual, automatic, or chronic such that their influence on behavior has receded from consciousness (Bargh et al. 2001).

Mobile changes the way we view shopping goals because it can be used to contextually prime other goals while the shopper is shopping, causing a dynamic shift in goal pursuit. For example, mobile apps could exploit the conflict between shopper deal-proneness and the need for immediate gratification by using triggers to shift focus from wanting a good deal and saving money to paying more to get immediate delivery. Mobile shopping combines two very important ideas, interactivity and instantaneity. Other platforms and media may offer interactivity, but they do not do so at the moment of truth as

mobile does. However, there can be a cost to this instantaneity. In a brick-and-mortar environment, once a shopper enters the implementation mindset, focusing on how to best execute previously made shopping plans, there is very little shifting back to deliberation. Mobile devices make shifting back and forth between deliberation and implementation more feasible by providing instantaneous information that can lead to abandonment or acceleration of previous shopping plans. Consequently, mobile marketing could likely strengthen or inhibit chronic goals already present, such as deal-proneness (Blattberg and Neslin 1990; Lichtenstein, Netemeyer, and Burton 1995) or reward-seeking (Ramanathan and Menon 2006). The ubiquity of contextual mobile coupons and offers when shoppers are near a store could lead to deal-prone shoppers becoming even more predisposed to such intervention. Indeed, using a mobile device to place orders online increases the order rate and order size and enhances the future incidence of ordering habitual products through mobile and locking them in for subsequent purchases (Wang, Malthouse, and Krishnamurthi 2015).

Contextual offers trigger shopper motivation to shop because their serendipity and unexpectedness create a positive affect (Heilman, Nakamoto, and Rao 2002; Walker Naylor, Raghunathan, and Ramanathan 2006). Such offers have been shown to lead to larger shopping baskets and to increase the number of unplanned purchases (Heilman, Nakamoto, and Rao 2002). In particular, offers that are compatible with shopper predispositions such as prevention or promotion focus may lead to significant increases in basket size (Ramanathan and Dhar 2010).

Mobile may offer marketers the opportunity to track such predispositions dynamically, make relevant offers, and trigger

Table 1
Research avenues and unexplored questions.

Entity	Areas of interest	Research questions	
Shopper	Motivation/shopping goals	RQ–S1)	How do we design mobile apps that tap into goods that are dynamic in relation to the shopping cycle and context?
		RQ–S2)	How do we better measure and enhance mobile shopper engagement?
	Search and discovery	RQ–S3)	How can marketers optimize their mobile app design to best influence shoppers on their path to purchase?
		RQ–S4)	How should apps be designed to deliver rich experiences across a wide range of devices?
		RQ–S5)	How can marketers enhance mobile co–creation?
		RQ–S6)	How can mobile enable shoppers to serendipitously discover a potential purchase?
	Evaluation, consideration, and choice	RQ–S7)	How can marketers design a dream concierge/intelligent avatar–knowledge based system/expert system–to assist shopping?
		RQ–S8)	In designing intelligent recommendation systems, how can marketers walk the fine line between creating personalized solutions but not being perceived as creepy?
		RQ–S9)	How can mobile create more relevant/valuable relationships with the individual shopper?
		RQ–S10)	How can mobile be used to create context–related and timely value to shoppers?
		RQ–S11)	How can the instantaneity of mobile be exploited to create different forms of instant gratification for the engaged shopper?
	Post–purchase	RQ–S12)	How can marketers create a positive network effect among shoppers in a social network after purchase of one category through links across mobile apps?
Employee	Employee roles	RQ–E1)	How does mobile change the shopping journey (pre, during, and post) from an employee perspective?
		RQ–E2)	What are the factors that create resistance toward mobile technologies from the employee perspective, and how can firms develop coping strategies to overcome this resistance?
		RQ–E3)	How can employees utilize the mobile device within the shopping journey to created new value propositions?
	Employee metrics and incentives	RQ–E4)	How can employees be incentivized to become mobile shopper marketing ambassadors?
		RQ–E5)	How can employees be utilized as co–creators of mobile shopping experiences?
		RQ–E6)	How should employee–mindset metrics be conceptualized, defined, and measured in the context of the mobile shopping journey?
		RQ–E7)	How should employee performance be measured throughout the mobile shopping journey?
Organization	Resource allocation and spending issues	RA–O1)	How can firms effectively develop and maintain their social capital in the context of mobile shopper marketing?
		RQ–O2)	How should mobile execution capability be conceptualized, defined, and measured to enhance the mobile shopping experience?
		RQ–O3)	How can firms effectively develop and maintain partnering networks relevant to delivering a superior mobile shopper experience?
		RQ–O4)	What are the right conversion metrics relating to mobile shopper marketing relative to other marketing activities?
		RQ–O5)	How can the return on the investment (ROI) or digital yield on mobile shopper marketing initiatives be quantified compared to that for other desktop related digital activities?
		RQ–O6)	How should firms spend their limited marketing budgets?
		RQ–O7)	How much money should be allocated to mobile versus other digital marketing activities?
		RQ–O8)	How should firms determine the proportion of the marketing budget that should be devoted to mobile shopper marketing?
	Data–related issues– collection and management	RQ–O9)	How can we harness the dynamic (time, location, weather) nature of mobile data?
		RQ–O10)	How can we leverage the volume, velocity, variety, veracity of mobile data and derive value for the firm?
		RQ–O11)	How can we value mobile data?
		RQ–O12)	What is the price of collecting the data that mobile shoppers want to share?
		RQ–O13)	How can we enhance data security in a mobile networked world where firms share (APIs) with their partner organizations?
	Data–related issues– modeling and analysis	RQ–O14)	How can we formulate effective decision models with mobile data?
		RQ–O15)	How can we integrate mobile data with other data, including offline activities and demographic data and develop cogent models?
		RQ–O16)	How can we analyze mobile data to formulate models that explain shopper behavior?
		RQ–O17)	How can we develop predictive models that can forecast mobile shopper behavior at both the individual and the aggregate levels?
		RQ–O18)	How should firms use mobile data to assist real time mobile marketing decisions?
Mobile technology	Convergence	RQ–T1)	As shoppers increasingly search on their mobile devices through Google and as Google becomes more powerful using shopper data, what technologies can retailers deploy to avoid becoming the fulfillment centers of Google and remain competitive?
		RQ–T2)	How can marketers leverage technology and use data on shoppers' past purchase patterns and voluntarily disclosed preferences for offering anticipatory solutions?
		RQ–T3)	How can marketers use mobile–based virtual currencies in a manner similar to M–pesa, Coke's MyCokeRewards, and China's QQ?
		RQ–T4)	How will new mobile payment technologies (e.g., Apple Pay, Google Wallet) and systems affect shopping?
		RQ–T5)	What differences in mobile shopping will emerge across North America, Europe, Asia, and the rest of the world given the differences in mobile technologies across these geographies?
		RQ–T6)	How can emotion–capture and analyze technology be used to better serve shopper needs?
	Wearables	RQ–T7)	How will augmented reality reshape mobile shopping experience?
		RQ–T8)	Will augmented reality lead to a fundamentally different shopping cycle?
		RQ–T9)	How can we measure shopper emotions through wearables?
		RQ–T10)	How can we create compelling shopper experiences based on shopper emotional states?

purchases. For example, Pizza Hut China is offering shoppers near the vicinity of its over 1,400 restaurants movie ticket prizes through a WeChat messaging application as a reward for interacting with beacons inside their restaurants through their smartphones. A mobile promotional coupon can increase unplanned spending by 16.1% and if it requires shoppers to travel farther from their planned path, it could boost unplanned spending more than a mobile coupon for a category near their planned path (Hui et al. 2013). Furthermore, trajectory based mobile communications trigger shopper goals and enhance their spending (Ghose, Li, and Liu 2015).

While firms receive value from such dynamic tracking of shoppers, there may be serious concerns about privacy and intrusiveness (Belanger, Hiller, and Smith 2002). Shoppers generally dislike mobile ads, with a report showing that four out of five customers found them unacceptable due to their intrusiveness (Gupta 2013). While shoppers are typically engaged with mobile apps, they use only a few of these apps regularly. Although the average smartphone has about 40 apps, shoppers typically use only about 15 or less regularly (Gupta 2013). Only a few of these apps are for brands or stores, so the competition for app space on a shopper's mobile device can be rather daunting for marketers to overcome. The key for marketers is to get their app on the first screen of the mobile device.

Another aspect of mobile is that it provides users with a feeling of constantly being in touch, with both the external environment at large and the users' own social connections (Stafford and Gillenson 2004). Shoppers do not merely expect mobile shopping services to be useful in meeting their functional goals, they expect the mobile shopping services to serve their enjoyment and self-expression needs (Nysveen, Pedersen, and Thorbjørnsen 2005). These needs are often neglected by the marketer.

Branded apps can help improve shopper awareness of products and offers and boost spending. Branded apps and mobile platforms serve as effective and personalized marketing communication tools (Wang, Kim, and Malthouse 2015). The use of two main interactive features of a branded app – information lookup and check-in – increases app adopters' spending levels, but when shoppers discontinue using the app, their spending levels decrease (Kim, Wang, and Malthouse 2015). Therefore, apps need to be sticky to induce shoppers to continue using them and should be continuously updated and redesigned to remain the state-of-the-art.

In our view, mobile marketing apps with the greatest chance of success in a crowded device environment are those that balance functional needs with hedonic and social affiliation needs. The ubiquity of interactive tools and apps for photos, video and music, and social media, creates opportunities for co-creation of value via user-generated communication, product design, and custom experiences that best meet the variety of shopper needs. Importantly, such needs should be tracked dynamically so that relevant content, whether functional/informative or hedonic/entertaining, is delivered appropriately. Furthermore, increasing shopper engagement will entail measuring it on an ongoing basis using mobile interventions. Mobile shopper engagement refers to the involvement of the shopper in her shopping experience through mobile. It is higher when mobile shopping experience is more personal and pleasurable.

These issues lead to some unanswered research questions. *How do we design mobile apps that tap into goals that are dynamic in relation the shopping cycle and context* (S1)? *How do we better measure and enhance mobile shopper engagement* (S2)? Engaged shoppers are likely to purchase more items, more often than non-engaged shoppers. Measuring engagement in response to mobile interventions is challenging because of the absence of a robust system to track shopper behavior following a mobile intervention due to privacy concerns, self-selection bias, and difficulty in linking mobile use to purchases in other channels.

Search and Discovery

Shoppers use mobile for one or more of the following activities: browse the web, use apps, find store location/directions, find store hours, compare prices, access promotional offers, find where specific products are sold, find product information, find product availability in-store, find product reviews, and make a purchase (Google M/A/R/C Study 2013). Convenience and savings are the primary motivations for using a mobile phone for shopping. Mobile shoppers desire clean, easy-to-use sites and apps and perceive self-service as the main value derived from mobile (Ericson, Herring, and Ungerman 2014).

Mobile also allows shoppers more opportunities in their search strategies. It can serve as an intelligent agent (e.g., Siri, Google Now, Cortana), enhancing the customer's entire shopping experience. It allows shoppers to search product reviews and experiences of other shoppers quickly and instantaneously while on the move. Mobile optimized and search engine friendly retail sites are likely to accelerate search and discovery. For example, searching a store on a mobile device should return store contact details with maps and hours of operation, increasing the chances of shopper's selection of the store (Kim, Wang, and Malthouse 2015; Wang, Kim, and Malthouse 2015).

While convenience and savings may be the fundamental drivers of mobile search, there are other reasons why consumers find mobile search and discovery attractive. Mobile devices provide a sense of immediacy, offering a realization of having everything accessible literally at one's finger-tips. Marketers who facilitate a sense of discovery and serendipity during the pre-purchase process will likely benefit from increased user engagement.

As the number of form factors in mobile devices increases, marketers will face the challenge of designing apps that help shoppers search and discover appropriate solutions and deliver a consistently rich experience in a device-agnostic manner. As marketers try to increase their presence on mobile devices via apps, the risk of choice and information overload increases significantly for shoppers. In particular, the constraints of physical space combined with the use of mobile apps as extensions of websites may exacerbate the sense of overload and frustration. It is therefore incumbent on the marketer to view apps not just as extensions of their websites but as tools to create and sustain shopper engagement through customized and user-relevant solutions. Rather than simply transferring tethered web content to a mobile app with limited functionality, marketers need to tap into the unique capabilities offered across different form factors to provide a seamless and painless

interactive experience. These capabilities include geo-targeting (based on the user's location) and micro-content (very short duration content designed for mobile devices).

From the app design standpoint, several research questions remain open. *How can marketers optimize their mobile app design to best influence shoppers on their path to purchase (S3)?* An effective app design involves key decisions on form factor and responsiveness across devices and browsers. *How should apps be designed to deliver rich experiences across a wide range of devices (S4)?*

The next frontier in mobile marketing lies in enhancing shoppers' ability to co-create products, experiences, and communication. One way such co-creation can occur is through apps that help shoppers use the photo and video capabilities of mobile devices to design customized products. Shoppers can share the creations from such apps with others and refine the creations with their input, allowing social co-creation. Shoppers can use mobile devices to design their own shopping experience, for example, by choosing whether they wish to receive offers or deals to save money on a given shopping trip driven by savings goals or to receive offers for hedonic rewards and freebies on a trip driven by hedonic goals. Mobile offers unique opportunities for shoppers to generate content for communication, and to use the rich media capabilities of devices to create blogs or videos for sharing on online brand communities.

Marketers wish to determine how they can design shopper-created or co-created offerings/experiences. By involving the shopper in the offering or experience, marketers can engage the shopper more and get their buy-in. *How can marketers enhance mobile co-creation (S5)? How can mobile enable shoppers to serendipitously discover a potential purchase (S6)?* More research is needed to address these questions.

Evaluation, Consideration, and Choice

A study by McKinsey & Company found that digital touch points, including mobile devices, were highly relevant at the shopper decision journey's stages, in particular, the evaluation stage (Banfi et al. 2013). In fact, the study found that digital touch points, have replaced traditional touch points (i.e., face-to-face interactions) as the primary contact between the marketer and the shopper during some stages of the decision journey.

As the shopper navigates online or offline (aisles of a store), evaluates different offers, and considers possible solutions, mobile expert systems and "shopping concierges" can provide rich interactive experiences. In-store sensors or beacons linked to apps on mobile devices may trigger location-specific interventions within the store, leading to more targeted and customized experiences for the customer. For example, Macy's uses iBeacon, a mobile technology platform, to alert in-store shoppers about deals and customized offers, assess different offerings, and increase purchases. Shopping avatars or smart agents could suggest accessories and complementary products based on stored information about the shopper's inventory and prior tastes. These tips could then be translated into choice by the use of quick response (QR) codes and other instantaneous interventions delivered to the device on a location-specific and targeted basis. Two unresearched relevant questions in this context are as follows: *How can marketers design a dream concierge/intelligent avatar – knowledge based system/expert system – to assist shopping (S7)? In designing such intelligent recommendation systems, how can marketers walk the fine line between creating personalized solutions but not being perceived as creepy (S8)?*

A potential challenge that marketers may face is that mobile devices are not very conducive to extensive information search and processing that requires significant investment of time and effort. Rather, shoppers appear to use mobile for habitual purchases, preferring to reserve their research on products such as cars or life insurance for larger screen devices such as PCs. It is thus unlikely that mobile could completely replace traditional sources of information for evaluation and consideration of options such as mainstream media and PCs, especially for complex purchases. However, it has also been shown that the lifetime value of customers who use mobile as an additional channel of information, over and above their traditional channels, is higher than when mobile is not used (Wang, Kim, and Malthouse 2015; Wang, Malthouse, and Krishnamurthi 2015).

Beyond the transactional aspects of mobile devices highlighted above, marketers may do well to recognize the tremendous potential of mobile to help people transcend geographic and cultural boundaries (Turkle 2011), reduce social distances among people (Cerulo 1997), and link workspace with personal space (Gant and Kiesler 2001). Mobile devices are seen by shoppers as extensions of their own identities (Walsh, White, and Young 2010). The advent of apps such as Meetup and Amino which promise to create mobile communities of users with similar interests points to the huge potential for using mobile apps to create deeper and more meaningful relationships with shoppers than what is currently being done. *How can mobile create more relevant/valuable relationships with the individual shopper (S9)?* Knowing the answer to this question can enable marketers to tap into a more organic way of influencing consideration and choice, relying on community-driven processes rather than traditional methods such as advertising and promotions.

Marketers thus need a deeper understanding of how mobile can create personalized value, which is critical in the mobile context (Lariviere et al. 2013b). Related unaddressed questions in this regard are: *How can mobile be used to create context-specific and timely value to shoppers (S10)? How can the instantaneity of mobile be exploited to create different forms of instant gratification for the engaged shopper (S11)?*

Post-purchase

From a post-purchase perspective, mobile is often a convenient channel to share shopper opinions. The immediacy of the medium offers an ideal opportunity for both frustrated and delighted shoppers to post their opinions before the experience fades from memory. The link to social media platforms is well-suited for sharing information, visuals, and video about the shopping experience with friends and family. At the same time,

marketers can continue to engage shoppers after purchase through mobile-linked loyalty programs and customization tools.

Increasingly, shoppers use mobile to link social media to shopping. After purchase, shoppers can share their shopping experience with others. Sites such as Pinterest allow shoppers to share pictures of their favorite products, "pinning" them to personalized boards that they can share with friends and family. Sites such as Wanelo and Fancy take this a step further, allowing shoppers to "post" products, creating a curated set of their favorite discoveries for the benefit of the online community, and providing links to online retail stores featuring these items.

Other shoppers provide instantaneous feedback to the community, posting pictures, uploading videos, and writing comments via forums such as Yelp and YouTube. These moments can be captured and shared via online apps. Increasingly, the emphasis of marketers is on creating more memorable experiences that can be shared with the online community. Savvy retailers such as Bloomingdales have tied the brick-and-mortar experience to mobile, creating unique events, such as flash mob dances at their stores, resulting in viral videos posted online by shoppers from their mobile devices. As another example, shoppers for boating-related products and services use mobile to engage with the rest of the boating community. West Marine, a retailer of such products, views the mobile screen as a means to create a miniature store experience and sharing of word of mouth—which includes the look and feel, product display, the best deals, and presence of the brand (PWC 2015). By delivering a superior experience and allowing experience sharing after purchase, West Marine hopes to translate post-purchase experience into favorable actions from other boaters.

A better understanding of additional value creation after purchase across categories and providers through mobile technology is needed. Videos that go viral, tweets that are re-tweeted in an instant, and shares on Facebook are all well-known ways in which experiences are shared real-time and linger on for a long time thereafter. The potential to influence this process of value creation is tremendous. In particular, communities may serve as arbiters of which complementary or related products are most trust-worthy or reliable. This situation raises the following unanswered question: *How can marketers create a positive network effect among shoppers in a social network after purchase of one category through links across mobile apps* (e.g., links to American Heart Association and Jenny Craig for a food marketer) (S12)?

Employee-related Mobile Issues

Employee Roles

Typically, frontline employees (e.g., retail associates) have been considered an important resource for generating social capital, especially those involving service roles (Coelho, Augusto, and Lages 2011; Kumar, Dass, and Topaloglu 2014).

In traditional retail settings, employees typically are regarded as 'experts' (Brady and Cronin 2001). They exhibit knowledge of the product or service being sold and invariably aid shoppers in both the search (e.g., finding and selecting clothing items) and the decision-making process (e.g., assembling a matching clothing outfit for a specific occasion). With the rise of mobile technology, such traditional role divisions between shoppers and employees are redefined, sometimes at the risk of the employees becoming a barrier in allowing mobile shopper marketing to reach its full potential. With the shopper literally bringing mobile into the retail space, she turns into a 'well-armed' shopper on the go, being more informed and becoming more demanding. Consequently, employee feelings of threat, obsolescence, and possibly redundancy by the new technology may lead to resistance. In some cases, these negative emotions may even sabotage mobile shopper applications. In fact, role changes driving employee sabotage tends to be a common phenomenon (Harris and Ogbonna 2002). This potential consequence challenges retailers to redefine employees' roles so that employees embrace mobile, leading to improved shopping experience for both the shopper *and* the employee. Analysis of the mobile shopper journey should explicitly consider the employee perspective, as a better understanding of employee emotions will allow firms to overcome internal resistance and use employees to leverage value gained by mobile shoppers. At the same time, it is important to consider which tasks within the journey that can be performed by mobile agents versus employees to maximize shopper value and minimize conflict between the role of technology and the role of the employee. This will lead to a more effective design of the mobile shopper journey overall. These arguments raise a number of research questions that have not been addressed so far: *How does mobile change the shopping journey (pre, during and post) from an employee perspective* (E1)? *What are the factors that create resistance toward mobile technologies from the employee perspective, and how can firms develop coping strategies to overcome this resistance* (E2)? *How can employees utilize the mobile device within the shopping journey to created new value propositions* (E3)?

Employee Metrics and Incentives

Given the newly created interactions between the shopper, employee and mobile, firms need to include relevant employee-mindset metrics in their marketing dashboards, allowing them to signal employee-related bottlenecks in the mobile shopper experience. Based on these metrics, firms can develop incentives that go beyond sales targets. One way to implement incentives is gamification. Many firms have experimented with gamification as a mode of shopper engagement to nudge shoppers along the mobile shopping journey (e.g., McDonald's Pick 'n' Play). However, gamification opportunities for incentivizing employees have not been explored much. Gamification elements may help to stimulate both cognition and affect in relation to experiences (e.g., Herzig, Strahringer, and Ameling 2012; Kumar 2013). In line with this reasoning, we suggest that gamification offers an interesting route to motivate and engage employees in the mobile aspects of the shopping journey and to facilitate mobile shopper experience. Eventually, new mechanisms need to be explored to create an integrative retail environment in which shoppers and employees do not become adversaries.

Following up on the effects of such incentives and developing meaningful metrics to track employee experience, engagement, satisfaction and consequently performance in relation to the shopping journey and mobile are of utmost importance. While metrics is a hot topic, much of the debate centers on consumer-related metrics (Peters et al. 2013; Srinivasan, Rutz, and Pauwels 2015). Surprisingly, little attention is devoted to employee-related metrics. These metrics are equally important for effectively designing and managing mobile shopping journeys, especially for those moments where the shopper, the employee and the mobile interact with one another. Additionally, it is important to realize that when employees and mobile start to interact, traditional employee performance measures might be compromised. For example, attributions of sales start to become more blurry. Commission-based incentives are an important component of payment schemes in the retail industry and are typically related to sales targets. The introduction of multiple apps and the integration of mobile in the shopping journey make attribution of sales much more complex. For example, Macy's in-store mobile promotions and trailing app might lead consumers to certain departments or brands, but the advice of the sales associate might be essential in closing the sale. This creates greater ambiguity in the attribution of sales, the evaluation of the role of the employees, and the associated metrics. Therefore, capturing these dynamics and attributing sales to the right channel and/or person are important challenges retailers are facing.

These arguments suggest a number of interesting research questions with regard to employee incentives and metrics. *How can employees be incentivized to become mobile shopper marketing ambassadors* (E4)? *How can employees be utilized as co-creators of mobile shopping experiences* (E5)? *How should employee-mindset metrics be conceptualized, defined, and measured in the context of the mobile shopping journey* (E6)? *How should employee performance be measured throughout the mobile shopping journey* (E7)?

Organization-related Mobile Issues

Resource Allocation and Spending Issues

Given the discontinuities inevitable in the mobile space, it is challenging to forecast changes. Therefore, firms need to develop adaptive capabilities (Day 2011) together with a vigilant learning capability which allows firms to follow a 'sense-and-respond approach,' consistent with the capabilities to offer adaptive experiences (Wilder, Collier, and Barnes 2014). More specifically, employees need to be trained to work with mobile technologies and applications that shoppers might bring into the shopping space. These forms of training should go beyond understanding the use of mobile to develop a creative mindset and flexibility (Wilder, Collier, and Barnes 2014), empowering them in the process. Building on the literature on frontline employees' contribution to innovation (Melton and Hartline 2013), a well-developed learning orientation throughout the firm will be helpful.

Going beyond applying these insights, firms need to be adept at adaptive market experimentation to be flexible and learn through experimentation at all levels (Day 2011). For example, Spotify has adopted an organizational structure with so-called "squads" that function like start-ups (Lunden 2012), allowing for the flexibility needed to deal with rapid changes in their environment and customer needs. A striking feature in this business model innovation is the integration of functions, a long-standing development that seems to be coming of age, leaving little room for traditional function-driven organizational structures.

To foster mobile execution capability, firms should consider the shopper, the employee, and beyond. First and foremost, many firms will struggle to maintain an organization that houses all the required capabilities and resources, creating a need for a network structure to build on. By creating a partnering network, a firm can diversify risk, as dependencies on one party are likely to make the firm vulnerable in such a dynamic environment (Haaker, Faber, and Bouwman 2006; Silverman and Baum 2002). However, given that the shopping journey comprises different phases that contribute to the shopper's experience, it is important to realize that one firm is not likely to be the sole provider of the experience. As Tax, McCutcheon, and Wilkinson (2013) note, the service delivery network surrounding an entire experience can be diverse, and while the firms providing the different elements of the experience may be unrelated, the shopper does not disentangle these different parts of the experience. Nor does she allocate these parts to different firms per se. For example, while delivery is not part of Amazon's core business, it is part of the shopper's experience of Amazon. To improve the shopper's convenience experience, Amazon has created a partner network with 7 Eleven where branded Amazon lockers are stationed. The sense of urgency to leverage networks and create open marketing structures is rising; this will allow firms to design, manage, and assess the impact of mobile along the entire (pre, during, and post) shopping journey.

To better leverage mobile shopper marketing, shoppers, employees and firms can collectively benefit from value fusion. "Value fusion is defined as value that can be achieved for the entire network of consumers and firms simultaneously, just by being on the mobile network" (Lariviere et al. 2013b, p. 277). Shoppers, employees and firms can individually and collectively contribute to a mobile network in real time and enhance its value.

This discussion leads us to the following organization-related questions: *How can firms effectively develop and maintain their social capital in the context of mobile shopper marketing* (O1)? *How should mobile execution capability be conceptualized, defined, and measured to enhance the mobile shopping experience* (O2)? *How can firms effectively develop and maintain partnering networks relevant to delivering a superior mobile shopper experience* (O3)?

Although firms are shifting greater resources toward mobile and are spending more on mobile in the digital mix than before, several issues still remain. First, as highlighted in the employee section, measuring the effect of mobile and attributing results to mobile activities are still uncertain areas. While attribution is an issue common to all marketing activities, it is particularly

challenging for mobile marketing. Given the multiple roles of mobile (search, comparison, post-purchase review, return) that could be linked to purchase in non-mobile channels, how can we measure and evaluate the role of mobile in a shopper's purchase? A related issue is measuring the conversion of mobile impressions to sales. Although the problem is similar to tracking any advertising (TV, print, outdoor), given the small screen size and limited degrees of freedom for mobile device and medium, the task is a bit more complex. In general, *what are the right conversion metrics relating to mobile shopper marketing relative to other marketing activities* (O4)? *How can the return on the investment (ROI) or digital yield on mobile shopper marketing initiatives be quantified compared to that for other desktop related digital activities* (O5)? Most models are still in their infancy. With individual-level tracking of mobile data, more customized allocation models are possible but need to be explored in depth.

Second, determining optimal spending on mobile and allocation of marketing efforts on mobile related activities are challenges. Online and offline media are synergistic and within media and cross-media and can enhance the overall media budget (Naik and Peters 2009). *How should firms spend their limited marketing budgets* (O6)? *How much money should be allocated to mobile versus other digital marketing activities* (O7)? The world is increasingly becoming "mobile first" in that shoppers are accessing information more through mobile devices than other means such as a desktop. *How should firms determine the proportion of the marketing budget that should be devoted to mobile shopper marketing* (O8)?

Data-related Issues

In general, mobile helps leverage shopper location information and predict shopper behavior. Mobile allows marketers to collect vast data on minute-to-minute shopper behavior so that marketers can understand and serve shoppers better. Mobile, used uniquely and correctly, can also provide competitive advantages for firms. It can help track shoppers at different points during the shopping journey, enable automatic replenishment of products and permission-based personalization, and facilitate cross-channel and cross-category sales.

Although mobile data are prolific and shoppers benefit from marketers' knowledge of their preferences and habits, shoppers are wary of the erosion of their privacy. What information are shoppers willing to share with marketers and to what extent will they tolerate marketers tracking them? What are the possible consequences if the boundary is breached? Moving forward, research should tackle these questions.

Using application program interfaces (APIs), mobile allows firms to share data and enable better B2B and B2C collaboration. The mounting use of mobile by shoppers to search, order, pick-up, and receive items on the go has enabled some retailers such as Macy's transform their stores into distribution and fulfillment centers as mobile provides location information about shoppers. As a result, mobile has disrupted the traditional business flow and model of retailers.

Because data related to shoppers' mobile use is voluminous and growing exponentially, mobile embodies the challenges associated with collecting, managing, and analyzing big data. Firms face a number of questions in this regard. The first set of questions relate to the collection and management of data. These questions include: *How can we harness the dynamic (time, location, weather) nature of mobile data* (O9)? *How can we leverage the volume, velocity, variety, veracity of mobile data and derive value for the firm* (O10)? *How can we value mobile data* (O11)? *What is the price of collecting the data that mobile shoppers want to share* (O12)? *How can we enhance data security in a mobile networked world where firms share (APIs) with their partner organizations* (O13)? Although these data issues are not unique to mobile marketing, they assume special importance for mobile marketing given the nature and quantum of data that mobile generates.

The next set of questions concern the modeling and analysis of mobile data. *How can we formulate effective decision models with mobile data* (O14)? *How can we integrate mobile data with other data, including offline activities and demographic data and develop cogent models (*O15)? *How can we analyze mobile data to formulate models that explain shopper behavior* (O16)? *How can we develop predictive models that can forecast mobile shopper behavior at both the individual and the aggregate levels* (O17)? *How should firms use mobile data to assist real time mobile marketing decisions* (O18)? Such decisions span a spectrum of domains, ranging from product bundling to dynamic pricing.

Organizations could use predictive models based on customer transaction and profile data to enhance shopper commitment and loyalty (Lariviere et al. 2013a). For example, firms could use customer loyalty data to predict the outcome of trigger events in the customer's life cycle (e.g., starting college, wedding, childbirth). In such situations, survival analysis can help firms predict customer switching (Malthouse 2007) and produce timely mobile interventions to prevent defections.

Mobile Technology Related Issues

Convergence

As mobile grows in prominence and as technology evolves, new decision questions will likely emerge for manufacturers, retailers, and service providers. While the evolution of mobile technology can follow many directions and it is difficult to fully predict the range of developments in the coming years, two trends at the forefront are convergence and wearables. With regard to convergence, an overall question is how different technologies and parties involved in their development are going to converge and compete. A similar trend has emerged with Amazon becoming the online arm for many small and brick-and-mortar retailers. Important unanswered managerial questions are: *As shoppers increasingly search on their mobile devices through Google and as Google becomes more powerful using shopper data, what technologies can retailers deploy to avoid becoming the fulfillment centers of Google and remain competitive* (T1)? *How can marketers leverage technology and*

use data on shoppers' past purchase patterns and voluntarily disclosed preferences for offering anticipatory solutions (T2)?

Mobile operators in some countries such as Kenya, Tanzania, and South Africa function as banks, allowing shoppers to use mobile minutes as virtual currencies to make payments through a service called M-pesa. Because such shoppers prefer to shop using their mobile virtual currency, marketers may need to tie-up with relevant mobile operators to expand business. *How can marketers use mobile-based virtual currencies in a manner similar to M-pesa, Coke's MyCokeRewards, and China's QQ* (T3)? *How will new mobile payment technologies (e.g., Apple pay, Google wallet) and systems affect shopping* (T4)? *What differences in mobile shopping will emerge across North America, Europe, Asia, and the rest of the world given the differences in mobile technologies across these geographies* (T5)? Newer mobile technology that can understand and analyze user emotions captured through shopper-mobile interactions is becoming available. *How can this emotion-capture and analyze technology be used to better serve shopper needs* (T6)?

Wearables

The emergence of wearables such as fitness bracelets (e.g., Fitbit Force and Shine Fitness Tracker), smart watches (e.g., Apple watch, Samsung Galaxy Gear, Moto 360 watch, and Pebble watch), smart spectacles (e.g., Google glass), and smart apparel (e.g., Intel Curie) has made mobile shopper marketing even more interesting. These wearables differ from hand held mobile devices such as smartphones and tablets in that unlike hand held devices, wearables are attached to a shopper's body for much of the shopper's waking and sometimes, sleeping time. Consequently, they can track body movements and are useful in monitoring healthcare. Indeed, shoppers use these devices to enhance their wellness. Users of Fitbit track a number of vital sign and regular movements such as the number of steps, calories, sleep hours, and pulse rate. In addition to the mobile shopper marketing issues identified for hand held mobile devices, new issues of interest include the scope to make offers bundled with tracking/healthcare apps, augmented reality, and the constraints imposed by the form factor.

Unlike standalone hand-held mobile devices, wearables do need smart devices as additional hardware for the apps to work. However, while a hand-held mobile device demands complete attention while in use, wearables allow multitasking. For example, a smart glass can be worn while walking, talking, and doing most of regular activities. This is where augmented reality comes into play for wearables. Augmented reality refers to the live view of a physical environment enhanced by computer-generated audio, video, and data information. Wearables can provide that augmented experience to a mobile shopper. Important research questions in this regard are: *How will augmented reality reshape mobile shopping experience* (T7)? *Will it lead to a fundamentally different shopping cycle* (T8)?

Through augmented reality, a shopper with a wearable such as a smart spectacle or watch going through a physical store can get relevant information on the product categories as she walks by their aisles. This feature allows for instantaneous mobile offers to be made to the shopper, who is likely to notice them as she walks along the store. Furthermore, wearables monitoring health activities can trigger reminders for the purchase or consumption of health-related products such as food, beverage, medicines, and healthcare services. Moreover, because wearables are always on, marketing messages can be delivered to the wearables every couple of seconds, leading to 'marketing at a glance.' Trulia, a real estate firm, partnered with Google glass to deliver property-related information such as broker name, list price, property amenities, neighborhood statistics, and other property data to users who viewed a property. Wearables have the potential to allow mobile marketers to tap into not just location information of users like any other non-wearable mobile device, but also emotion information. The mini-sensors in the wearable can potentially function like electrocardiogram, reflecting changes in the shopper's emotional condition. Although emotion measurement is currently far from becoming reality, the promise of wearables for mobile shopper marketing is breath-taking. Research questions worth exploring include: *How can we measure shopper emotions through wearables* (T9)? *How can we create compelling shopper experiences based on shopper emotional state*s (T10)?

Conclusion

In conclusion, while mobile shopper marketing—the planning and execution of all mobile-based marketing activities that influence a shopper along and beyond the path-to-purchase—is growing rapidly, not much is known about it. In this paper, we have addressed this gap by discussing the scope of mobile shopper marketing and the issues of focal concerns to marketers with regard to mobile shopping and by identifying a key entity (shopper, employee, organization, and mobile technology) framework. The plethora of unanswered questions presents exciting opportunities for future research on mobile shopper marketing.

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