Towards Ubiquitous Commerce: New Commerce, Behaviours & Routines

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Abstract

eCommerce has dramatically changed over the last several years with the increased adoption of smart phones and social networking, leaving a gap of knowledge around what these changes mean to—and how they affect—the user and their experiences. To address this gap, we collected empirical evidence through three studies. The first looks at mobile web commerce, and focuses heavily on the issue of trust. The second looks at group shopping sites, an example of social commerce. Finally, the third study investigates mobile payment services and user challenges and successes. While each study has introduced specific design implications, together we hope to expand the work in traditional eCommerce to include social and mobile aspects and thus contribute new knowledge towards a more ubiquitous commerce (ubi-commerce) experience.

Author Keywords

ubiquitous commerce, eCommerce, mobile payment, social commerce, mcommerce, behaviors, routines

Introduction

Over the last several years, eCommerce has been rapidly transforming in response to the adoption of mobile and social technologies. Specifically, we draw attention to the expanding adoption of social

Figure 1. Mobile Commerce, Urban Outfitters Shopping

Figure 2: Mobile Commerce, theatre ticket purchase

networking sites and mobile phone market penetration as prime triggers to this development. This has brought about a new form of commerce, which leverages the mass adoption of mobility for real-time access to information, resources and tools for the purpose of shopping and/or purchasing goods or services, that before was only available in a stationary environment. These new form of commerce, such as social commerce (sCommerce), mobile commerce (mCommerce), and mobile payment services (MPS), have begun to impact not only developed nations economies (e.g., Canada, United States, Europe), but also developing nations' economies around the world (e.g., Kenya, India). Yet, we still know little about their users and how/if their needs are being supported. This paper outlines three studies which we have completed exploring these ubiquitous forms of commerce in an effort to identify users' social behaviours, activities and routines.

Study 1: mCommerce

The increase in mobile connectivity and mobile adoption is giving more and more users the ability to connect anytime, anywhere. This has provided a natural gateway to the introduction and development of a variety of mCommerce services. In 2011, comScore reported that 38% of consumers have used smartphones to buy products or services. No longer do users have to be confined to their stationary desktop computers in order to access the vast amount of tools and information that is found online.

With eCommerce continually adapting to this ever-changing landscape, practitioners and researchers alike must review significant factors that have been essential in the success of eCommerce and apply them to current trends. One such factor is trust. Trust has been a major obstacle for the success of eCommerce (e.g., [1]). Not only does trust play a key role in the adoption of new technologies and the initial trust with a new vendor, but trust results in repeat purchases and continued relationships [1]. Understanding trust in electronic commerce is essential to laying a foundation for comprehending how trust will continue to evolve. Despite this research, there was still not a detailed understanding of how mCommerce users shop and what trust concerns people have while shopping using a mobile device.

We addressed this gap by conducted a study looking at the behaviours and routines around mobile commerce shopping. Users reported mobile commerce activities via an electronic diary for a three week period and at the end of three weeks they participated in an in-depth interview. In total seventeen participants submitted a total of 161 diary entries.

Our findings showed that mCommerce shoppers either shop spontaneously, as a habit or routine or during fixed time intervals. I also identified that users are making mCommerce purchases outside of their home. Understanding routines and behaviours of users is important for informing the design process as it provides context around users' motivations and helps model designs to support these.

It was also revealed that mCommerce users have few trust issues, because of brand awareness, the app approval process and referrals through friends and family. These were identified as key trust mechanisms. Understanding what is important to build trust amongst users is essential in commerce, as initial trust aids in adoption and generally trust aids in continued use.

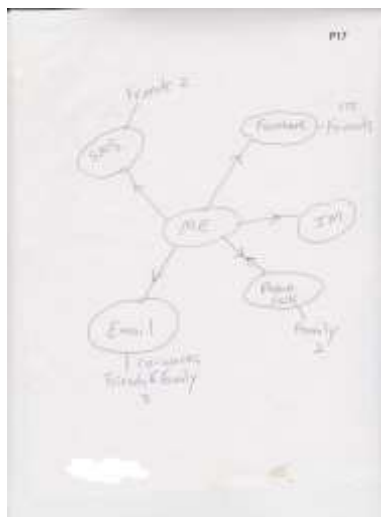Figure 3: Social Commerce, Posting Deals on Facebook

Figure 4: Social Commerce, sharing Groupon deals via mobile

Further, because purchases were made on a mobile device, unlike personal computers, they tended to be made from companies with an already strong tie to the user. This leads us to believe that mCommerce is more of an extension of the entire brand and less of a starting point.

Study 2: Social Commerce

Like mobile adoption, the emergence of group shopping sites has significantly impacted the socio and cultural landscape, resulting in sites such as Groupon, LivingSocial, Plum District and Half-Off Depot becoming key commerce sites over the last couple of years. These sites entice consumers with cheaper prices by leveraging group purchasing power. Groupon Inc, the largest online coupon company, saw revenue grow by 223% percent in 2010 and generated more than $700 million in revenue with a presence in more than 150 markets in North America and more than 100 markets in Europe, Asia and South America [1].

The first known use of social commerce originated in 2005 and was coined by Yahoo's David Beach. This definition asserts that the consumer is not the seller of the product or service but a social component to the selling process. This is the definition we employ as it focuses more on social relationships rather than the point of purchase or commerce engine being used. Further, it represents the social changes that have transpired online in the last couple of years, specifically the mass adoption of social media and the socialization of the web.

Past research has looked at users and their behaviours and routines on social networking sites but not as a commercial application, where the primary purpose of their activity is shopping. To address this, we conducted a study which explored users who participate in a form of social commerce (sCommerce), Group-shopping sites to better understand their users' shopping networks, motivations and routines. We investigated nineteen participants through semi-structured interviews and mind maps to visually show their sharing relationships.

Findings showed that social shopping groups are small and well known to the user and that participants knew about their family and friend's technical infrastructure and preference for which medium would be best to facilitate communication. Further, users typically either belonged to sharing groups that were described as Hubs, where one user did most of the sharing (the hub), or clubs, everyone shared equally (shopping club). It was also identified that these users prefer a range of communication tools and mediums (e.g., IM, in person, phone, Facebook etc.).

Perhaps most surprising, consumers were more deeply motivated by social activities such as: social event planning, building friendships and identity construction. At times these motivations even played a significant role in these users' social lives. Based on these findings, we suggest design directions that merge social networking with group shopping sites, empowering these users with impression management tools and a variety of cross-medium communication tools.

Study 3: Mobile Payment Systems

Using mobile phones as systems for payment is beginning to become a reality as vast numbers of users, both in developed and developing nations, have or are beginning to use these services. MPS is defined

Figure 5: Mobile Payment System, Google Wallet, NFC payment

Figure 6: Mobile Payment System Starbucks App, Barcode Scanning

as "all payments for goods, services and bills authorized, initiated or realized" on a mobile device [6]. The majority of successful mobile payment services currently use one or more of the following four payment solutions: carrier billing, near-field communication (NFC), apps, and card readers.

The potential for these services has recently been supported with online players such as Google and Amazon, aggressively entering the space with Google Wallet and Amazon Payments. These services aim to change how users make payments both online and in retail situations. While a number of studies have looked at MPS in developing countries and even developed countries in Europe and Asia, this past body of work has not focused on the North American market and smartphones.

To address this, we conducted a study by focusing on understanding how veteran and new MPS users participate in MPS in North America on smartphones with the goal of understanding how to design MPS to increase user experience. Findings were presented as user challenges and successes with MPS. Successes included: incorporating users' habits and routines, the use of gamification and entertainment, the presence of a positive social perception, avoiding negative regulatory procedures, and the current ease-of-use and usefulness. Challenges included: notable usability issues, notable trust concerns, fragmented MPS systems, lack of mental model development and users experiencing pre-purchase anxiety.

Workshop Goals

We are interested in attending the #CHImoney workshop to network with other researchers in this research community and gain a better understanding of how our work fits within this area as a whole. Further, we hope to gain an understanding of the next steps for the #CHImoney research community.

References
[1]   Alistair Barr, Forrester Analyst Questions Groupon IPO Validation, Reuters, June 8, 2011. http://www.reuters.com/article/2011/06/08/us-Grouponvaluation-idUSTRE7576UH20110608

[2]   Head, M. and Hassanein, "Trust in e-Commerce: Evaluating the Impact of Third-Party Seals", Quarterly Journal of Electronic Commerce, 3(3), (2002), pp. 307-325.

[3]   Hillman, S., Neustaedter, C., Bowes, J., and Antle, A., Soft Trust and mCommerce Shopping Behaviours, Proceedings of the ACM SIGCHI Conference on Human-Computer Interaction with Mobile Devices and Services, (MobileHCI2012), 10 pgs.

[4]   Hillman, S., Neustaedter, C., Oduor, E., and Pang, C., User Challenges and Successes with Mobile Payment Systems in North America, Technical Report 2014-0124-01, Connections Lab, Simon Fraser University, Surrey, BC, Canada, January, 10 pgs.

[5]   Hillman, S., Neustaedter, C., Pang, C., and Oduor, E., "Shared Joy is Double Joy": The Social Practices of User Networks within Group Shopping Sites, Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems, (CHI2013), 10 pgs.

[6]   Ondrus, J., and Pigneur, Y., Towards a Holistic Analysis of Mobile Payments: a Multiple Perspective Approach, Electronic Commerce Research and Applications 5 (3), pp. 246-257, (2006)