Abstract

The rapidly evolving and expanding technology of smartphones and social networks has been widely adopted and used. In this dynamic and highly interactive mobile environment, where vendors can reach customers anytime anywhere, social networks emerge as a powerful tool for mobile commerce. This paper aims to investigate Social Networks Systems (SNS) in the mobile setting and their use in mobile commerce. Our objective is to facilitate the understanding of customers’ perceptions of m-commerce and the use of SNSs and explore the potential of SNSs for m-commerce purposes. The paper presents an exploratory qualitative study about the use of smartphones and SNS, in the context of mobile commerce. Our qualitative results show that trust and ease of use are important factors for m-commerce and SNSs adoption and use. Business opportunities enabled by SNSs for m-commerce and how these can be leveraged in this promising mobile context are also discussed.

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Selection and/or peer-review under responsibility of The 2nd International Conference on Strategic Innovative Marketing.

Keywords: m-commerce; social network systems; trust; ease-of-use; consumer behavior

1. Introduction

Smartphones penetration could definitely favour the surge in mobile shopping. Owners of such devices are more or less connected to social networks with embedded location-based applications. Users have the option to communicate their location by “checking in” to a place and letting their social network friends know where they are. They can easily see if any of their friends have also chosen to check in nearby. Used in another manner, it helps vendors to locate their fans and customers, and target their mobile strategy to quickly interact with them. For example, a shoes vendor sends a user a private SMS invitation to try the last pair of trainers from the X brand. This X brand has a fan page on a Social Network System (SNS) enabling it to locate prospects and customers. When the system locates a smartphone with a switched on GPS application such as a SNS or any Map system, it can send offer alerts. These alerts, whether sent via Bluetooth, SMS or email, surpass privacy issues. Users disclose information voluntarily about their location, their habits, and their activities. At the same time concerns regarding privacy in m-commerce remain the same as in e-commerce, since they both involve transactions in an online (virtual) environment. In the mobile context, privacy concerns could be considered as even higher risk,
taking into account the use of SNSs, location-based applications and the information that is collected and can be available through them to anyone. Establishing trustworthiness remains very important for online companies in the mobile environment, and SNSs can help with an important capacity to build positive word-of-mouth. Facebook, Twitter as well as more recent SNSs which focus on images, video or sounds, i.e. rich media, such as Instagram*, Pinterest† or Snapchat‡, are widely used globally, with the latter gaining increasing adoption compared to the first.

The objective of this paper is to explore how m-commerce can benefit from the use of SNSs and location-based applications. We present an exploratory qualitative study on consumer perceptions and behaviour in m-commerce and in combination with social network systems. Through the analysis of interviews conducted for the study, we attempt to understand factors that affect the use of SNS on mobile devices and for m-commerce. A discussion of our findings concludes the paper.

2. M-commerce: An overview

Recent figures show an impressive growth of mobile devices use. Cell phone adoption is widespread, especially in young population, with 75% of teenagers and 93% of adults aged 18-29 having a cell phone. More than half (55%) of the latter group access the internet wirelessly from their cell phone (Lenhart et al., 2011) [5]. The evolution of mobile communications has triggered an increase in the use of mobile devices, such as mobile phones, to conduct mobile commerce on the mobile Web (Venkatesh et al. 2003, Ngai and Gunasekaran 2007) [11; 8]. It is important to differentiate mobile phone users and smartphones users. A recent study on smartphone adoption shows that 48% of all US mobile phone users own smartphones (Nielsen, 2012) [9].

According to Wu and Wang (2006) [12], m-commerce covers a large number of services, one of which is mobile shopping (m-shopping). It refers to “e-commerce activities via mobile devices, such as phones or Personal Digital Assistants (PDA’s)” (Mennecke and Strader, 2002) [6]. M-commerce may have not surpassed e-commerce yet, but the rapid growth of mobile telephony has fuelled the expansion of the mobile Internet as a foundation for mobile commerce (Lee and Benbasat, 2004) [4]. The mobile Internet has unique strengths because users can connect to it wherever and whenever they want (Kakihara and Sorensen, 2001) [2].

Whether m-commerce will surpass electronic commerce in growth and scope remains to be seen, with privacy being a central axis for its adoption. People freely give out information, for example when they upload a picture from their mobile to their SNS, in order to drive traffic to their website or to their SNS’s page. This is so important that some SNSs such as Snapchat, Pinterest or Instagram use pictures as the basis of their business model. With their heaviest users being teenagers and young adults, submerging in social media and addicted to their Smartphones and tablets, these SNSs seem important services to take into account in an m-commerce strategy. They represent very interesting platforms for customer engagement and retention which can help an e-commerce website and its products to be known in a target audience. They also represent opportunities for both consumer-focused and business-to-business companies. These SNSs allow an e-commerce website to connect directly with current and future consumers—developing a relationship that leads to sales, as consumers tend to shop from retailers they feel like they can relate to and “know” the brand: when you show the product as best as you can, providing good quality of image compression and fast downloading, customers tend to feel in a better situation with the seller since nothing is hidden. Transparency on SNSs such as Instagram, Pinterest or Snapchat

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* http://instagram.com/: Instagram, launched in October 2010, is an online photo-sharing, video-sharing and social networking service that enables its users to take pictures and videos, apply digital filters to them, and share them on a variety of social networking services, such as Facebook, Twitter, Tumblr and Flickr.

† https://pinterest.com/: Pinterest, launched in March 2010, is a pinboard-style photo-sharing website that allows users to create and manage theme-based image collections such as events, interests, and hobbies.

‡ http://www.snapchat.com/: Snapchat, launched in July 2013, is a photo messaging application where users can take photos, record videos, add text and drawings, and send them to a controlled list of recipients.
allows online vendors to build a relationship with their customers as well as driving traffic. Instagram can help to target a particular audience and engage the latter in a conversation, in order to develop a relationship that can lead to very good word-of-mouth and to loyalty. In a highly saturated e-commerce world, savvy consumers tend to buy from retailers they know and trust and SNSs like Instagram can be used as a shortcut to build that feeling.

Using their mobile device for numerous activities consumers share huge amounts of information, without being as reluctant as when using a laptop for example. They also offer websites the possibility to locate them, and thus, vendors can target them more easily. This tendency and willingness of users to disclose information through SNSs and location-based applications seems to create a paradox in terms of privacy concerns in m-commerce. This seems to be the biggest difference between e-commerce and m-commerce. Given the early stage of research, commonly accepted prescriptions for the future of SNS and m-commerce have not yet been established. Research on m-commerce deals with the comparison between e- and m-commerce, design concerns, loyalty, transaction management or adoption of m-commerce in general.

3. Qualitative study

An exploratory qualitative study has been conducted seeking to understand consumer perceptions and behaviour related to mobile devices and social networks. To our knowledge, research combining SNSs, m-commerce and trust is scarce, thus an exploratory approach of the topic, with a survey-based method using short interviews seemed appropriate. The main objective of this study is to investigate if the use of SNS on mobile devices is common, and if so, if users were influenced in shopping on m-commerce websites after using these social applications. In this direction and in an attempt to elicit data from consumers, the study has been conducted asking questions related to the following topics: use of social network systems on mobiles, use of mobiles for shopping, emotions and feelings felt following the visit of a mobile commerce website, factors affecting behaviour with mobiles and SNSs and perception an “ideal” m-commerce website. Questions were structured and open, allowing for low duration interviews. Every interview, the duration of which ranged from 20 to 25 minutes, was re-transcribed offering a verbatim of around 80 pages corresponding approximately to 6 hours of recording.

3.1. Participants

Sample selection was primarily based on qualitative criteria. To follow the criteria of data saturation (Mucchielli, 1991, p.114) [7], we interviewed 21 students. Students are deemed suitable as a sample even if their use has often been questioned in terms of their appropriateness. They share many characteristics with the profile of mobile and Internet users’ population. As shown by several studies, Internet users tend to be young adults, with the Internet usage penetration within the age groups of 18–29 years rising up to 95% (Zickuhr, 2010; Pew Research Center, 2010) [13; 10]. Hence, although our sample presents a bias towards younger subjects, it can arguably be acceptable as representative of Internet and mobile users. In addition, our study benefits from the use of students since they are considered as an important group of online consumers (Delafrooz et al, 2010) [1] and are useful as a sample for empirical studies in m-commerce, in line with previous research (e.g. Kim et al, 2008) [3].

We adopted a neutral attitude when interacting with the respondents so as not to influence their answers. Participants were questioned without being allowed to look at their mobile phone. This was to ensure that they answered only using their memory to access the information reinforcing their use of the combination of SNS and m-commerce websites of their choice. The sample was selected using a mix of age, gender and socio-professional background, in order to obtain a homogeneous sample.
3.2. Methodology of the exploratory analysis

The qualitative data have been analyzed with a table in which all the questions extracted from the interview guide were first written. A table file was used for each respondent. If a construct appeared while reading the transcript of a respondent’s interview, a “1” figure was placed in a result column, in the row of the particular construct. Subsequently, we summarized the results from our respondents in order to have a cumulative understanding of the answers collected. We grouped the “result” columns of all our respondents in a final table, where each construct had at least a “1” weight. This corresponded to a set of 21 columns, either with “1” figure or empty. Rows in this table indicated the different themes emerged from the interview guide. In this way, each construct had a weight in each respondent’s table, made of rows with or without “1” figures. Then the 21 respondents tables were concatenated in a summary one, enabling us to use the “1” columns to add rows and finally write the results obtained from the addition of “1” figures. It finally permitted us to formulate assumptions linking answers and respondent’s profiles.

4. Results

4.1. Phase of introduction: A growing use of Social Networks on Mobiles

Each respondent owns a mobile with 11/21 using iphone and 4/21 using Blackberry. The 6/21 others use Sony Ericsson, Samsung, Nokia, HTC as mobiles brands. These apparels are called smartphones because of their large screen and operating systems allow browsing on the Internet. They also provide users with the ability to instal application programming interfaces (API), widgets or softwares. This enables an easier use of SNS and m-commerce applications.

Any of the respondents is registered on one or several SNS: Facebook (18), Youtube (6), LinkedIn (6), Twitter (4). Nevertheless, even if all of these SNS offer an API on the different types of evocated mobiles, only 8/21 respondents use them on their mobile: 17/21 use Facebook on their mobile and 8/21 use Youtube. Their activities on their mobile differ as shown on the graphics (figure 3):

![Figure 1. Use of SNS on mobiles.](image)

This figure shows a good use of SNS with 7/21 respondents (see [1] on figure 1), an important use of the Internet to surf it 14/21 (see [2] on figure 1) and an emphasis on the use of Facebook since more than half of the respondents visit it on their mobile (see [3] on figure 1). The sending of short messages such as SMS appears to
be an important practice with 9/21 of respondents but seems replaced by these new SNSs that are Instagram, Pinterest or Snapchat which can be use to “chat” with friends through photos, videos and captions. Customers can think of them to be like texting with pictures or videos. All these figures indicate that recommending a link on a product, service or anything else from a mobile is perceived as a common practice nowadays with students. The use of the Global Position System (GPS) is not as spread as we imagined, with only 9/21 respondents answering that they had it switched on. They use it to “find a street or a place” (3/21), because it “helps me when I’m lost” (3/21), because “friends can find you easily” (1/21), or because it “shows you where there are concerts” (1/21).

4.2. Phase of centering the subject, use of mobile for shopping

Among the 21 respondents, only two use it to shop on m-commerce websites. Thereby, music is bought thanks to the apple store for Itunes (3/21). Train tickets are also rarely purchased by our respondents on their mobile (1/21). Indeed, some of them don’t find it practical (2/21), preferring to use their laptop (2/21) for convenience purposes. Only one respondent referred to confidentiality concerns. When asking respondents about their perception when using their mobile rather than their computer to shop online, two topics appeared more important than the others: ease of use and security. Three respondents answered “I feel more comfortable on a laptop”. 1/21 found it “easier” whereas 2/21 found it “less convenient”. The speed of use has been mentioned too since the mobile “seems quicker” for 1/21, and the “feeling of freedom” exist too (1/21). For one respondent, “it just doesn’t come to my mind to use it for this kind of things like shopping”. This underlines the importance for companies to communicate on their mobile presence. On the security side, 1/21 respondent answered: “I am afraid that it’s more risky to give away my data on the mobile (credit card)” and another one said that shopping on its mobile “looks less secure”. Only 1/21 respondent referred to the speed of use explaining: “I often have a better wifi connection with my laptop, so I don't want to waste time shopping with my mobile”.

4.3. Phase of deepening, mobile and SNS

We asked respondents about what they think is important to use their mobile for apart from making calls and sending SMSs. Most of them referred to the possibility to contact their community “for Facebook” (10/21) which is found to be “rich, captivating and pleasant to interact with”. Respondents are also interested “to get in touch with people” (3/21). Thanks to the use of a SNS, a brand can receive recognition and exposure from a renowned m-commerce website, and can increase exposure and following of its SNS account. Others mention the possible “use of the Internet” (10/21), in the intention to “find information” (4/21). The fact that SNS help respondents to “keep informed” (4/21) and that they are “easy to use” (2/21) as well as “interactive” (2/21), represent points they find relevant for their personal use. This is reinforced by 2/21 of them, saying that the SNS must also be “intuitive”, e.g. permitting “an easy access to videos on youtube” or “handy, easier to use than the usual homepage you have” for 1/21. This is reinforced with the following characteristics our respondents pronounced when asked what they sought when using their SNS on mobile: “funny” (1/21), “aesthetics” (1/21), “quick” (1/21), “pleasant” (1/21) and “useful” (1/21).

4.4. Emotions and feelings felt following the visit of an m-commerce website

When respondents have been asked to describe the feelings that they associate with a SNS or a social application used on their mobile, the following terms arose. Words such as “convenience” (4/21), the fact of finding “information when needed” (3/21) have been cited. An “easy” use of their application (3/21), at the top of being “funny” (2/21), making them “free” (2/21), or helping them “to not feel lonely” (2/21) takes into account what respondents strive with this type of application. SNS on mobile also help them to reach “happiness” (2/21) in parallel to fulfill their “curiosity” (2/21). Interviewees are also “happy to save time” (2/21): it brings “pleasure”
(1/21) and “excitement” (1/21) to their everyday life. We can notice that they all are in relation with the already evoked feelings described about their use of SNS on mobile. Shopping online could be seen as an entertaining way to use a mobile.

A projection phase into the interview guide permits us to conclude that 3/21 respondents only received an invitation for a commercial proposal issued from an organization, thanks to the combined use of their GPS and SNS. 2/21 referred to an experience they encountered close to what they heard during this projection phase and mentioned for example: “when I was on Facebook, a friend posted a link that I wanted to visit in order to take advantage of the same offer”. Another one says “I have an application regarding stores, so I receive sometimes discounts and then when I am in the shop when I want to use the discount rate, I just show the message”. Thus, some respondents already benefit from the conjoint use of SNS embedded on their mobile. The GPS also seems famous by 1/21 respondent only: “I’ve been contacted via Bluetooth with offers when I was in shopping malls”. Another respondent relates to the use of SMS as vehicle to reach the web on its mobile: “I receive SMS which offers me something if I answer to the SMS”. Among these commercial proposals, 4/21 of respondents accepted it, and the equivalent did not. This shows the relative trust consumers are willing to give regarding this type of commercial relationship. On this question of trust, when respondents are questioned about what encourages them to trust a particular SNS/social application and not another, we observe that peer recommendations represent an important reason why trusting an m-commerce website. Thereby, when “it is popular” (6/21) especially into the network of the respondent, when the “SNS / m-commerce” application “has been heard from friends”, 7/21 respondents seem more interested in the m-commerce website. On top of that, privacy concerns arise. “If it respects our privacy when sharing info” (4/21) and “when many other people trust it and have it” (5/21), respondents are inclined to install a SNS application or visit an m-commerce website. Like for e-commerce, “when there is a special safe paying system like Paypal” (3/21) respondents accept to pursue this initiative to reach a new m-commerce website.

Topics linked to the human-mobile interaction also remained: 3/21 respondents evocate the “ease of use” as a condition. An “appealing” aspect (2/21) and the fact that the “design is professional” (1/21) seem also important. If “it looks safe (presence of https)” (1/21) and if “it's fast” (1/21), there are good reasons for respondents to access this new website. Of course, some respondents stay reluctant, thereby 2/21 “don't trust them at all” (about SNS and m-commerce websites) and (2/21) “don't give many information to them” but they are willing to give some apparently... Popularity of the application thus become a crucial asset to help it to exist in the mobile market world: “if it is popular” (6/21), “safe” (4/21), “recommended by friends” (3/21), or if “other people have already tested it” (3/21), there are good chances for it to survive. Indeed, “the people who use it and how often they use it” is important for 3/21 respondents and the fact that the application permits users to “stay in contact with people” (4/21) can guarantee an increasing use of this application. On top of network concerns linked to these m-commerce applications, “simplicity” is important for 4/21 respondents. “Security” (5/21) and “user friendliness” (3/21) have been cited too. The “choice” of applications is important for 2/21 respondents only, and the “price” has also been cited by a minority of them (3/21). Indeed, most of the applications using SNS and/or m-commerce are free. Once again, “professionalism” represents an important asset to take into account for organizations willing to invest in m-commerce since 2/21 respondents evocate it.

The factors which encourage users to re-visit a particular website on their mobile mainly relate to ergonomics and ease-of-use concerns: “if it is practical” (6/21), “if the website functions without problems on my mobile” (4/21), if it is “easy to load” (4/21) and if the application is “adapted for the screen of my mobile phone” (2/21), it is even better for the SNS. Finally, m-commerce websites containing a “lot of offers” or which are famous according to “the clients they have” (2/21) constitute good reasons to register on this type of application. This is even true “if I find useful information” according to 4/21 respondents. Reversely, the factors which discourage users from re-visiting a particular website on their mobile relate to the “slowness” of the application for 5/21 respondents. If the “website is not intuitive” (3/21) or if the user has “difficulty of access” to it for 3/21 of respondents, it doesn’t help to install a SNS application dedicated for m-commerce. Once again, ergonomics
appear as an important concern since a “not user friendly” application will deserve the SNS for 2/21 respondents. “If I cannot read it on my mobile […] it discourages me” reported 2/21 respondents. Unreliability must also be taken into account by organizations for 2/21 respondents. “If it is dangerous for the security” was evocated by 2/21 respondents. Identically, presence of “advertisings” can be a reason to ignore an application (2/21) whereas an offer of “bad products” was also cited by 2/21 respondents.

After around ten minutes of conversation, we asked respondents two final questions to summarize the interview. We first asked after visiting an m-commerce website what aspects contributed the most to remaining loyal to this website. Not surprisingly, issues of interface and trust towards the expected services arose. 5/21 (24%) of respondents said that the SNS should be “easy to use on a mobile phone”. Users usually want to personalize their mobile (color, shape, cover, wallpaper, theme, etc.) and practically make it part of their life as it happens for e-commerce websites. Aesthetics consideration can influence users, as they may spend more time using their mobile when they find it nice to look at, to wear or to show. This contributes to maintaining low privacy concerns associated with the commercial use of this particular device since relaxing and appealing websites are preferred among others to captivate users.

Other respondents based their judgment on service: “if I am satisfied” is foremost the necessary condition for 4/21 (19%) of respondents. In relation to the proposed application, if I am “happy with the service” is important for 3/21 (14%) of respondents. A “fast delivery” is important for 2/21 (10%) and if “I received the goods I bought on time” for 1/21 (5%). These figures reinforce the fact that m-commerce is still in its infancy. Applications that procure benefits to the user such as 2/21 (10%) of respondents say they “have advantages using it” will encourage the proliferation of such applications. On the contrary, 2/21 respondents are reluctant with them, and conclude with “I cannot imagine being loyal to any m-commerce website” without specifying on which aspects they complain. This is in line with what recent SNSs offer, free web analytics tool enabling brands using the latter to determine which of their contents drive the most click-throughs to their m-commerce website. One of the key factors of success of m-commerce lies on an easy measure of the reach of the SNS’s content with these useful tools.

With regards to the catalog of products offered on the m-commerce, the “prices lower than in a shop” will help 2/21 (10%) of respondents to choose m-commerce. The importance of the catalog with “many products” is important too for 2/21 respondents. One refers to the importance of “good products” another one on the “large variety of products”. The application itself “must be well-known” by 2/21 respondents in order to trust it. In this direction, a “fast website” is preferred by 2/21 among them. This will be based on a “good structure” for 1/21 respondent. Like for e-commerce, freshness is much appreciated thanks to “something new” for 1/21, making the application even more easy to use. This will add the “reliable” aspect one respondent cited, and also reinforces its “clear” aspect.

And finally, when we asked respondents to think of any ideal m-commerce website and what makes it ideal, only two websites have been cited: “Amazon” (3/21) and “Ebay” (1/21). These m-commerce websites provide the “Information I want” (2/21). Back to the most repeated items of this exploratory research on SNS and m-commerce, “user friendliness” of the application is mentioned by 4/21 (19%) of respondents. An emphasis on ergonomics and ease-of-use remains high throughout the interviews. The “security/privacy level is high” to 4/21 (19%) respondents, with a “secure website” being important for m-commerce for 3/21 (14%) respondents.

5. Discussion

This paper presented an exploratory qualitative study examining consumers perceptions regarding the use of mobiles for commercial transactions, for SNSs as well as the combinations of SNSs and m-commerce. Our analysis shows that there is a growing use of SNSs on mobiles and a positive intention towards m-commerce, especially when it is combined with SNSs. The most important factors that affect m-commerce and SNSs adoption and use can be summarized to trust, reputation from others that use them and ease-of-use.
It seems important for companies engaging in m-commerce to exploit the potential of SNSs in order to become known, increase their customer base and provide more interactive communication, gaining customer trust. Another approach, which could possibly address the issue of privacy concerns, could be the use of personal or private data during a short period of time only. The general rule of Internet sharing thanks to SNSs, merely lies on the fact that if someone puts it on the web, it will be there forever – even if you delete it later. It could be reassuring to know that the content uploaded on SNSs will not remain there for ever and be will be automatically deleted soon after it has been viewed.

One of the unique key factors of success about Snapchat for example, is this “self-destructing” feature of photos. A few seconds after photos have been viewed, they disappear. This feature could be used by companies incorporating SNSs in their business model for promotional purposes. When a company promotes a product for a short period of time, a consumer chatting with a friend by sending photos, can use this feature where the photo is instantly deleted seconds after it has been opened by the recipient to add some pressure on the scarcity of a product for example. Even if is still possible to capture content and save it permanently, m-commerce companies could efficiently use SNSs in this way to gain profit, and to increase customer trust and feeling of privacy.

The results of this exploratory study are indicative of the theoretical as well the managerial implications of this topic, especially the joint use of m-commerce and SNSs. Further research is needed to extend this study and its results with a confirmatory study, examining the factors affecting consumer perceptions and behaviour as well as the interrelationships among them.

6. References