Social Shopping: The Use of Online Social Networks to Support Shopping-oriented Decision Making

Completed Research Paper

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Abstract

Decision making (DM) is something we all do in our daily lives. How shopping DM is conducted with the support of online social networks (OSN) has not been explored in research. Although the usage of OSN is growing rapidly, there is a poor understanding of how OSN can provide support to shopping decision makers; this research is aimed at understanding how shopping DM is conducted with the support of OSN. The study involves a multi methodological approach consisting of a Netnography study and an online survey. Findings revealed that shopping-oriented OSN provided strong support for the intelligence phase of DM. Two new phases were also discovered, namely Guidance and Vent. Support was seen within DM phases; however, these phases appear in an inconsistent manner and follow the anarchical DM model. A model and framework to understand DM in shopping-oriented OSN is also proposed.

Keywords

Decision making, online social networks, shopping process, anarchical process, netnography

Introduction

Decision making (DM) is something that we all do daily. Regardless of its scale, every decision made will have an impact on our lives. Likewise, shopping makes the purchasing of goods and services an essential part of our daily lives. DM is part of purchasing or shopping, especially when it comes to products and services DM. The complexity of DM includes the ambiguity of commitment, decision-maker experience, affect and insight (Langley et al. 1995). Modern consumers are now moving towards the convenience of online shopping; however, physical shopping is still important especially for products that are highly priced or require physical assessment before purchase. Often consumers are faced with dilemmas with regard to purchase decisions as there are many questions in mind that could potentially affect the outcome of the purchase decision. With the increased usage in technology today, consumers often use the internet to seek information that assists them in making their shopping decisions, the World Wide Web often being used to obtain information, opinions, and to view discussions to make shopping decisions. The usage of online social networks (OSN) is emerging where consumers have access to useful information, conveniently and at no cost.

Studies involving combined DM, OSN, and shopping have been rather limited. Although research is widely conducted on DM, past research has mostly been organisation-oriented (Langley et al. 1995; Simon 1979). Recent DM research has shifted towards specific fields such as health for example (Schiavone 2011; Watts et al. 2002). With the recent emergence in OSN like Facebook and Twitter, more studies emerge with regard to information search using OSN (Watts et al. 2002). Online social media such as blogs, wikis, and social networks are improving speed and reinventing communication. The world has changed from one-to-one communication to many-to-many (Hawn 2009), weblogs, instant messaging platforms, video
chats and OSN are new revolutions in how many activities in our daily lives, such as shopping are conducted. Organisations have to change their marketing styles to suit technological change in our society (Gordon 2007). Although the usage of OSN is growing rapidly, there is a poor understanding of how OSN provide support to shopping decision makers in general.

In this paper, the relationship between OSN and consumer shopping-oriented DM is explored from both the consumer and business perspective. From a consumer perspective, it is important to understand how they use OSN to support their shopping decisions. From a business point of view, the findings will assist organisations in understanding consumer DM with regard to shopping. We explore the areas of DM, shopping and OSN as a whole, as well as propose a model and framework that would help in the understanding of DM with the support of shopping-oriented online social networks (SOSN). Hence, the paper attempts to answer the questions: how do SOSN support consumer shopping oriented DM? Do consumers follow a rational decision process when it comes to DM? What is the DM process that consumers follow, with the usage of SOSN as a support tool? The research methodology undertaken to answer the given research questions is a multi-methodological approach of a netnography and survey. The exploratory approach of netnography is ideal as this study is essentially an ethnographic one to analyse how people behave within SOSN. A survey is conducted to validate the findings from the netnography.

In the following sections of the paper we first explore the DM process and DM support in OSN. Next, the netnography and survey methods used in the study are described together with the key research findings. Then the proposed SOSN model and framework are introduced. Finally, we conclude with a summary of the research and results.

Decision Making and its Support in Online Social Networks

First and foremost, Simon (1959) established the classic DM process by presenting a three-step sequence of intelligence-design-choice. In the intelligence phase, problem identification and classification as well as data collection occur. The design phase involves the development of alternatives to problems identified in the intelligence phase. Lastly, choice is basically a selection of the alternatives developed in the design phase. This is also known as a sequential view (Langley, et al. 1995). An extension to this classic DM process was made by Huber and McDaniel (1986) by introducing two new phases: implementation (executing the decision), and monitoring (observing and evaluating the executed decision). Mintzberg and Westley (2001) suggested rational DM is a clearly defined process that starts with the problems being initially defined, then the causes are diagnosed, followed by the design of possible solutions and lastly making a decision on which is best. Further refinement of Simon’s (1959) model was made by Zarat and Teulier-Bourgine (2001) who argued the DM phases were often revisited.

The consumption-oriented DM process may have some similarity to the general DM process. However, research has shown that although the act of consumption still requires a decision, the process to that final decision is somewhat different. The act of purchasing is broken down into a series of decision processes. Relating to Simon’s (1959) DM model, Olshavsky and Granbois (1979) have expanded the choice DM phase, explaining why it occurs, how it is evaluated, and what is taken into consideration during that phase. A growing focus within consumption research today is that of purchasing in an e-commerce environment. In this context, a classic buyer’s purchasing behaviour has several stages: Need recognition, Information search, Evaluation, Purchase and After purchase evaluation (Engel et al. 1990; Kim and Srivastava 2007).

Reliance on OSN for information is growing and this has enabled users to be decision makers with its support. Credibility has been a key concern in terms of obtaining and relying on the information received. Sources are perceived as credible when there is great expertise as well as very little tendency to bias (Brown et al. 2007). OSN are formed when there are sufficient people partaking in publically available computer-mediated discussions with emotions generated into them, to develop social relationships with other users (Rheingold 1993, as cited in Brown et al. 2007). The involvement of emotions in online conversations may lead to a strong bond, and eventually trust and belief in the information provided. Lee et al. (2011) conducted research on the effect OSN has on real world just-in-time decisions. This is significant because of the extensive usage of mobile devices in DM and how individuals are connected to OSN via various mobile channels. It was discovered that information provided through OSN has an influence on just-in-time DM.
Word-of-Mouth (WoM) networks have been expanding rapidly and are particularly obvious within the online and social networking media (Brown et al. 2007). They are represented mainly by consumption-related online communities. Participants are individuals who are particularly interested in a product category and seek information on purchase advice, connecting with other like-minded people, or would like to communicate (Hoffman and Novak 1996). Participants are able to use these online communities to search for information, and at the same time view opinions from others to make a decision. The WoM network has a great impact on product judgments, attitude formation, and DM that exceeds the impact of formal marketing communications (Brown et al. 2007). The informality that exists within OSN allows users to take their time to understand the product as well as search for more information that was not provided. Companies are able to take this approach and use it to their advantage as the number of people engaging themselves in online communities is huge. Brown et al. (2007) also found that consumers seem to evaluate the information credibility by the website and the individual who contributed to that information. Credibility is important, as it has an impact on the users’ DM and final outcome (eMarketer 2010). A model that reflects social shopping process within consumer DM was proposed by Anurag (2010). It describes the role of OSN in the context of consumption and DM as well as the elements that decision makers experience before making a purchase decision. The elements within this model are Total Set, Awareness Set, Consideration Set, Choice Set, and Decision. The decision element involves the individual sharing their experience on OSN and seeking opinions. A comparison between the opinions is conducted, and the final decision and the purchase made.

**Problem Issues and Requirements**

As mentioned there is only sparse research within the DM, OSN, and SOSN domains. Based on the synthesis of that literature and problems identified, a set of requirements is proposed to address the problems that exist with DM and SOSN. There are two requirements proposed: exploring the areas of DM, shopping and OSN as a whole; proposing a model and framework pertaining to DM process in the context of DM in SOSN.

OSN is a social construct and as such there are certain methodologies that support exploration within this research area. In this paper, we present the multi-methodology approach consisting of both a netnography and survey that was used for the research. Netnography is ideal because it is an exploratory and ethnographic study (Kozinets 2010; Sandlin 2007). An explanatory approach of the survey seemed to be ideal for the explanation and validation of the netnography results. The two sections that follow discuss the design, implementation and key findings of the netnography and survey.

**The Netnography**

Netnography is a useful research tool particularly for studies involving learning within the informal aspect of consumer learning, including online communities (Kozinets 2010; Sandlin 2007). For this research, Kozinets (2010) guidelines were generally followed and adapted to the research focus and needs. Other forms of guidance were also used such as Kozinets (2002) and Langer and Beckman (2005). The approach adopted for the research is depicted in Figure 1 and discussed below.

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1 For consistency purposes, we will be using the term “shopping” instead of “consumption”, although both of these terms are interchangeable. Hence, we will refer to consumption-oriented OSN as shopping-oriented OSN (SOSN).
Theorising and Generalising – This phase of the netnography process consists of three steps: planning, data collection, and data analysis. In the initial planning phase, numerous products were selected for the research. We selected a range of products ranging from very expensive (less frequent purchases) items such as cars; to medium-priced products such as cameras, laptops and mobile phones; and low-priced products such as clothes and cosmetics. The reasoning behind the selection was that these products are actually distinguishable in terms of price range and value. Clothes are deemed as a necessity whereas cars are considered as higher end purchases. Also, the product variation enabled comparison of results between products and shopping as a whole. The forums selected for each of these products were random but still fulfilled the general site selection criteria presented by Kozinets (2010). We used popular OSN such as Facebook, dpreview.com, and lowyat.NET.

The next step was data collection, which overlaps with the third and final step of data analysis. The approach to data collection was rather simple. As a start, all data from the selected forums were collected. These forums were selected based on the number of views as well as popularity to provide some justification to credibility. From an infinite number, conversations were then selected based on the highest rating and activity. A total of 19 conversations were collected, involving 19 different topics, and 362 postings were recorded out of these. Given that the topics and channels were different, the participants were also different and representing a large range of demographics.

The focus on data analysis began as soon as a satisfactory amount of data had been collected. Some of Kozinets (2010) initial Netnography phases were combined for effective analysis and oriented towards grounded theory research. An important part of the analysis included revisiting the data collection phase if data was thought to be insufficient. Driven by this approach, data analysis started with theorising and generalising. This approach also verified whether Simon’s (1959) DM model applied in the context of SOSN. The next procedure of the netnography process was noting and coding.

Noting and Coding - Remarks were noted down whenever an interesting finding was discovered (noting), as well as the breaking down of the initial categories into further subcategories (coding). Existing categories and newly formed subcategories are shown in Table 1 below.

<table>
<thead>
<tr>
<th>Existing</th>
<th>Newly formed subcategories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligence (I)</td>
<td>Intelligence Statement (IST)</td>
</tr>
<tr>
<td></td>
<td>Intelligence - Utility (IU)</td>
</tr>
<tr>
<td></td>
<td>Intelligence - Seeking (ISF)</td>
</tr>
<tr>
<td></td>
<td>Intelligence - Expressing (IE)</td>
</tr>
<tr>
<td></td>
<td>Intelligence - Complaining (IC)</td>
</tr>
<tr>
<td>Design (D)</td>
<td>Design - Brand Image (DBI)</td>
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<td></td>
<td>Design – Purpose (DPU) Design</td>
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<tr>
<td></td>
<td>Design – Features (DFE) Design</td>
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<td></td>
<td>Financial Status (DFS)</td>
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<tr>
<td>Choice (C)</td>
<td>Choice - Brand Model (CBM)</td>
</tr>
<tr>
<td></td>
<td>Choice - Operating System (COS)</td>
</tr>
<tr>
<td></td>
<td>Choice - Support (CS)</td>
</tr>
<tr>
<td>Implementation (Imp)</td>
<td>Implementation – Execution (ImpEx)</td>
</tr>
<tr>
<td>Monitoring (M)</td>
<td>Monitoring - Feedback (MF)</td>
</tr>
</tbody>
</table>

Table 1: Coding Categories and Subcategories

Abstracting, Comparison, Checking and Refinement - In the third and final procedure of the netnography process, abstracting and comparison went hand-in-hand with checking and refinement. For the purpose of better understanding, the explanations of these phases are separated. First, abstracting and comparison; we organised the data to identify similar phrases, sequences, relationships, and differences. The mappings of the postings to phases were done manually (as shown in Figure 2). The conversion of coding-results to a higher level of abstraction occurred in this phase.
At the same time, the data collection phase was revisited to obtain more data in order to verify the patterns, process, commonalities and differences identified in the previous steps (Kozinets 2010). As the process continued, notes and remarks were jotted down as a form of reflection of the data to be alert to trends and patterns. The axial form of coding was applied here, aimed at development of the main categories and sub-categories (Pandit 1996).

Second, checking and refinement; according to Kozinets (2010) this step will allow researchers to isolate, verify and refine the findings. The moment findings were made, the original source was revisited to ensure that all the data had been collected. Also, the data collection phase was revisited to review the source as well as possibly collecting more data to provide an in-depth understanding into the sequences, process, commonalities and differences discovered in previous steps. Often more data was collected in order to verify the particular trend/pattern/process that we had discovered.

The netnography shed some light into the DM in SOSN domain, and discoveries from the netnography will provide a deeper understanding in the DM process supported by SOSN. The key findings of the netnography are discussed below.

**Key Findings of the Netnography**

The prime finding of the netnography analysis was the discovery of the DM phases that are supported by SOSN. The analysis revealed strong support for the DM phases from Simon’s (1959) sequential DM model. Intelligence, design and choice DM phases do exist in the online environment of SOSN. The implementation and monitoring phases by Huber and McDaniel (1986) had weak support for the DM phases supported in the SOSN environment. In addition, it was discovered that the DM phases follow an anarchical DM model discussed by Langley et al. (1995) and that DM tends to appear in an inconsistent manner. This supported the Cohen et al. (1972) study where garbage can model was proposed, depicting DM in uncertain surroundings.

Apart from that, two new elements were discovered within DM supported by SOSN, namely Guidance and Vent. Guidance provides direction to the conversation, to specific users or in general. Vent is the emotional aspect within conversations that was mostly filled with frustration and anger and it is seen as an element depending on the type of conversation. For instance, with health OSN, the degree of vent or emotional influence is higher and is dependent on the seriousness of the health issue (Sadovykh 2011). The degree of emotional influence within OSN is expected to be higher with serious matters, such as health, children, and jobs. While the study of emotions has been taking place within DM (Bechara et al. 2000), research has not taken place in the context of SOSN.

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**Figure 2: The posting movement drawings for mobile phones**

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Lastly, the netnography discovered a high volume of postings for certain products. Laptops, mobile phones, cameras and clothes conversations had a higher level of postings and support for the DM phases, as opposed to cars and cosmetics. Luxury goods such as jewelry and car conversations had a rather low traffic volume, consumers either seeming to prefer to physically evaluate the product themselves or the product is highly customised. The next section presents the survey undertaken to validate the findings from the netnography.

The Survey

The survey was used as a tool to verify our observations from the literature as well as our netnography findings. The survey was conducted online via surveymonkey.com; conducting the survey online provided easy access for OSN users. The targeted participants of this survey were users of OSN. The survey was advertised on OSN such as Facebook to ensure that a wide range of users were reached for participation. The target of over 80 responses was achieved by obtaining 86 responses. A clause was placed at the very start of the survey to emphasise that only users of OSN should be participants.

The survey design included a pilot survey. This pilot survey involved people who use OSN and the design was based on the literature review, and initial netnography findings. For the purpose of quality control, three rounds of pilot survey were conducted. The initial round was with a population of five people; feedback was taken and the questions then repeated to a second round of five people. The final round was with an expert in the area of marketing surveys; all of this ran concurrently with the netnography analysis.

Based on the outcomes of the pilot implementation and findings from the netnography, the survey design and questions were finalised. The final survey was conducted online and promoted through different channels to ensure that people from various backgrounds were being represented in the survey data. The targeted range of participants was quite broad, to reach individuals who used OSN for shopping DM. The data collection period was from September to November. In total, 86 responses were received and 83 were considered valid.

DM process in the context of SOSN forms the basis of this research study. Hence, the survey questions consisted of DM process questions in order to understand DM process within the context of SOSN. A general hypothesis was derived to understand the DM process better and test the relationship between OSN users and DM process. The null hypothesis states that OSN for shopping do not support the DM process. The alternative hypothesis states that OSN for shopping do provide support. The general hypothesis is presented below:

Null hypothesis (H₀): OSN for shopping do not support the DM process.
Alternative hypothesis (H₁): OSN for shopping do support the DM process.

Data collected from the online survey was used for statistical analysis of the hypothesis. The hypothesis was then divided into five sub-hypotheses for further analysis. This is because the DM process consists of five stages (Intelligence–Design–Choice–Implementation–Monitoring). The sub-hypotheses were derived from both the general hypothesis and the literature. It tested whether online social network users followed the DM process for shopping. To test these sub-hypotheses, a form of nonparametric test was applied, the Chi-Square test. This tested the null hypothesis for significant differences between the observed and expected data (Chi-Square Test, n.d.). The key findings of the survey are discussed below.

Key Findings of the Survey

The demographics of the respondents from this survey revealed that they were young educated students who mostly use their laptops to access the internet. The survey also discovered that SOSN were used on a monthly basis as opposed to the daily usage of general OSN. Through the netnography, it was discovered that cellphones, laptops, cameras as well as clothes conversations have a high volume of postings in comparison to cars and cosmetics. This finding was validated through the survey where most shopping decisions with the support of OSN were to do with electronics such as cellphones, laptops, cameras as well
as clothes. Most users found SOSN useful in their DM and would recommend this method to their friends and family.

The key finding from the survey analysis revealed that intelligence was the only DM phase that was supported by SOSN. This however, provided a contradictory result to the netnography analysis. The remaining phases of design, choice and monitoring were not supported by statistical analysis. The statistical analysis of the implementation phase provided mixed results as the percentages of supporters and non-supporters of the implementation phase presented in the results were not consistent with the statistical findings. As the findings provided contradictory results for the implementation DM phase, we took the conservative stand of concluding there was no support for this phase.

Having discovered the emotional aspect of vent in the netnography analysis, we fed this into the survey for validation. Vent was known as the emotional component in the survey. Through statistical analysis, it was discovered that emotional posting awareness within OSN does not affect DM in individuals. However, more than half of the participants responded that they are aware of the emotional component within OSN, this validating the findings from the netnography analysis that emotions do exist within OSN. Survey findings also revealed that DM with the support of SOSN was primarily to find information and recommendations; this provides a strong support for the guidance element. The next section will present the models and framework in DM supported by SOSN.

**DM Supported in SOSN Model and Framework**

One of the research objectives of this study was to propose a model and framework that would help in the understanding of DM with the support of SOSN. This section provides a brief summary of the model and framework. The proposed ‘Shopping Cycle through OSN’ model, depicted in Figure 3, consists of the central elements of the research topic. The model is a high level perspective on shopping DM with the support of OSN and was derived from the literature, netnography and survey findings. This model also serves as a foundation for the proposed ‘General Framework for DM in the context of SOSN’ depicted in Figure 4.

![Figure 3: Shopping Cycle through OSN](image)

The shopping cycle (Figure 3) presents an illustration of a trigger to the actual act of purchasing itself. The decision maker starts by having an intention of purchase and is represented by the ‘Trigger’ label. This is followed by the DM process, which consists of the various DM phases that were discovered from the literature, netnography and statistical analysis. The DM process is supported by SOSN. The last step is the purchase itself.
Having the research questions in mind, a proposed framework that addresses DM in the context of SOSN is presented (Figure 4). This proposed framework addresses the final requirement of the research and attempts to cover the gap in the literature and combat the existing problems discussed in the previous sections of the paper.

This proposed framework represents a generic shopping cycle that incorporates DM supported by SOSN (Figure 4). Past literature often covers DM processes and phases in a non-online environment, and very little is known about shopping DM with the support of OSN. The gap and problem within literature is that of the understanding of shoppers making decisions using OSN as a support. This framework aims at overcoming this and represents a detailed view of a shopping cycle using OSN to assist in DM by incorporating the presence of advisors, seekers and observers.

The framework has been constructed based on the proposed ‘Shopping cycle through OSN’ model (Figure 3). The research focus is the SOSN domain; however, this was represented to reflect the research findings from a bigger picture, from the start of the shopping cycle until to the end. The cycle repeats, as decisions to purchase are part of our daily lives. Figure 4 represents what an individual would most likely go through when making decisions for shopping using SOSN.

The proposed framework is developed to assist in shopping DM with the support of SOSN that have a relatively large traffic volume. The framework may not be applicable to conversations that have small volume as there will potentially be missing elements as well as postings to understand the DM pattern and sequence.

Learning and experience take time, longer than an individual’s developing awareness and interest in a particular product. Should the decision maker/seeker decide to explore further, they would do so through SOSN and may act as an observer (no contribution to the conversations) or advisor (contributes to the conversations). This may or may not trigger any purchase decisions and the shopping cycle repeats again. Implementation and monitoring were deliberately excluded from the DM phases supported by SOSN as it was discovered there was no explicit evidence to say these phases take part within SOSN. Neither implementation nor monitoring were supported in the netnography and survey analysis. However, those were supported in rational DM in real-life context by Huber and McDaniel (1986). This unique finding differentiates DM in a real life context than DM supported by SOSN.

Guidance and vent are incorporated as supporting elements of the DM phases supported by the SOSN domain. Guidance is seen as the guiding aspect of conversations, and could be open or closed in nature. Open guidance is where the conversation was really broad and generic, and useful to a broad range of audience. Closed guidance is where the conversation is directed to a very specific audience. Finally, the
Online Social Networks to Support Shopping-oriented Decision Making

A plethora of research has been conducted on DM in the last few decades; however there is a paucity conducted on DM with the support of SOSN. The first phase of this research study reviewed and evaluated the present literature in DM, shopping and OSN. Following this, the second phase explained the exploratory approach of theory building through a netnography. The study of SOSN was conducted and evaluated as to how it provides support to DM. Findings from this approach were fed into the survey with the aim of validating the netnography findings as well as discovering new trends and patterns that were not found in the netnography. The results and analysis of both the netnography and online survey were aimed at achieving answers to the research questions.

The multi-methodological approach provided two perspectives, the exploratory and the explanatory. Synthesising findings from both netnography and survey, it appears that DM within SOSN does not follow the rational DM phases. According to Simon (1959) and Huber and McDaniel (1986), the rational DM process consists of five phases: intelligence, design, choice, implementation and monitoring. From netnography analysis and statistical evidence, SOSN supports only the intelligence DM phase. The design, choice, and monitoring phases had no support from the statistical analysis which failed to validate our findings from netnography. Also, statistical findings provided contradictory results for the implementation DM phase, and a conservative stand was taken to conclude that there is no support for this phase. Survey findings revealed that many online users were using OSN in a casual role (peer influence, browser and observer), which may explain its poor support in some decision phases.

One of the key research objectives of the research study was to propose a model and framework that would help in the understanding of DM with the support of SOSN. To satisfy this requirement a model of the Shopping cycle through OSN (Figure 3) and a General Framework for DM in the context of SOSN (Figure 4) were proposed. Both the model and framework were derived from the key findings from the literature review, netnography and survey analysis. These two artifacts support the main contribution of the study which is discovering DM with the support of SOSN. The study uncovers the differences between DM in an offline and online environment as well as providing an understanding of the types of products supported by SOSN. However, a limitation of the study is that it involves the online environment, and is based on texts, it was difficult to predict or analyse the context behind those texts and conversations within OSN. We suggest broader research in DM supported by SOSN can be conducted. Future research could explore other types of OSN and other products such as intangibles like legal or medical services. At the same time, the scope of study can be expanded by investigating the emotional aspect within SOSN.

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