

1. Exploring the Website Features that can Support Online Collaborative Shopping?

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Abstract

Shopping is a social activity that people enjoy doing with friends and close ones. In this paper we name such joint shopping activity performed by two or more people together as “collaborative shopping”, and investigate the possible means of carrying it out online. We start with identifying the objectives of collaborative shopping (i.e., socializing and purchasing) and propose website features (communication support and decision support) to support these objectives. Our study posits that a better fit between the shopping objective and the website feature provided results in higher process satisfaction and outcome satisfaction. This research advocates further research in online collaborative shopping and hopes to provide guidelines for website designers. We believe online collaborative shopping deserves more research attention, not only from a purely research-oriented perspective, but also for its practical potential for making online shopping a success.

Keywords: Collaborative Shopping, Website Design, Social Presence, Decision Guidance

Introduction

Shopping is one activity that has a very high need for social interaction (Puglia et al. 2000). People like to shop with friends and close ones in a social and collaborative environment, rather than in isolation¹ (O’Hara and Perry 2001). Indeed, it is often observed that the mere expectation of talking to others about products and their consumption experience can often influence attitudes towards the product and induce preference shifts (Schlosser and Shavitt 2002). Furthermore, those who shop in groups may cover larger areas of stores, purchase more, and spend more money than when shopping alone (Sommer et al. 1992).

While socializing may be one reason of shopping collaboratively, there can be several others. People may shop together when the consumption of the product is not at the

¹ There is another group of researchers questioning whether shoppers truly seek social experiences (Eroglu and Machleit 1990). For instance, Falk and Campbell (1997) argue that shopping can be a private affair that one prefers to engage in isolation. We believe that some shopping activities do need to be engaged in private, such as bargain hunting (Schindler 1989). However, even under these conditions, consumers often rely on advices (e.g., professional product ratings and comments) in making purchase decisions. In this vein, certain level of external information needs do exist. While this study does not focus on isolated shopping, we believe this paper will also be able to provide recommendations to marketers on how the websites could be designed to take into consideration the social influence of opinions that can persuade consumers to acquire their products.

individual-level (e.g., buying a living room sofa set) (Corfman and Lehmann 1987), when the purchase is associated with significant financial resource commitment (e.g. acquiring a house) or social implications (e.g., accountability) (Anderson 2003), and when the product familiarity is low (Westbrook and Black 1985). Irrespective of the reason, the act of shopping together with others in a group is termed as “collaborative shopping” and when collaborative shopping is carried out online using information and communication technologies (i.e., computers, the Internet, etc.), it is defined as “online collaborative shopping”.

The need to interact with other shoppers, to seek information, advice and assurance is an integral aspect of shopping expedition. When such information regarding potential purchases is not available, shoppers have a tendency to defer making the purchase decisions (Sommer et al. 1992). To this end, several factors could cause a gap to arise between the purchase intention and the purchase action (O’Hara and Perry 2003). According to Gershman et al. (1999) the intention-action gap is created by three factors or discontinuities – (i) *physical discontinuities*: the person is not in the right place to be able to act on the influence; (ii) *informational discontinuities*: people do not have sufficient information to be able to act on the impulse; and (iii) *awareness discontinuities*: the opportunity to fulfill the impulse lies outside the immediate focus of the person’s attention.

With the increasing ubiquity of Internet technology, availability of mobile technologies, and the advancement in decision-support tools available on online storefronts, it is believed that collaborative applications can be designed to empower shoppers to interact and shop collaboratively in the face of the above-mentioned discontinuities. In other words, such applications could allow shoppers to share information based on similar interests and contexts (i.e., when and where they need that information). Though system features supporting collaborative shopping is still quite under-explored, recent developments indicate that online vendors and system designers are taking steps in this direction. The incorporation of ‘Shop with a Friend’ feature in Land’s End website and development of prototype frameworks for collaborative shopping (e.g. MultECommerce and vCOM) reflect this (Puglia et al. 2000; Shen et al. 2002). This study seeks to provide insights into designing e-commerce websites that can support online collaborative shopping by incorporating features for shopping together over the internet.

This study proposes a fit framework that integrates the objective of collaborative shopping and the technology features needed to support them. We posit that a better fit between the shopping objective and the website features, can result in higher process satisfaction and outcome satisfaction.

Objectives of Collaborative Shopping

What is collaborative shopping? The term “collaborative” refers to something that is conducted or produced by two or more parties working together. Applying this meaning in the context of shopping, we can define *collaborative shopping* as the shopping activity conducted by two or more people together. There are several situations in which people shop collaboratively. As illustrations, consider the following two scenarios:

(1) Suppose you and your friend, Amanda, need to buy a gift for your friend Carrie’s wedding in two days time. Both of you want to go about buying the gift together since a mutual decision would be more desirable, however Amanda is out of town for work and will only be returning a couple of hours before the ceremony. What will you do?

(2) Consider another situation. Rachel and Smith have been going out for the past six months. One of their favorite pastimes is hanging out in shopping malls together, browsing

shops and enjoying each others company in the process. Some work related assignment takes Rachel to a different country and during this period of separation both of them yearn for their favorite activity of hanging out in the shopping malls.

For you and Amanda, the main objective is to purchase something that both of you agree upon. However, Rachel and Smith do not have any specific shopping plans in mind when they go to shop together; they just want to enjoy each other's company. If their shopping expeditions result in some purchases being made, it is merely the by-product of the social interaction process. Thus, it seems that people have two primary objectives of shopping collaboratively – that of socializing, and that of purchasing something. In certain situations, the socializing aspect of collaborative shopping dominates, whereas in other situations, the procurement aspect is more important than socializing. There can be several other collaborative shopping scenarios where people have varying levels of socializing and purchasing objectives.

Given these two distinct objectives in collaborative shopping, collaborative shopping objectives can be thought to vary along the surface of a plane, with socializing forming one dimension of the plain and purchasing the other dimension (see Figure 1). Different shopping scenarios can differ in terms of the relative importance of the objectives of socializing and purchasing, and can be represented on this plane. A couple going for shopping to enjoy each other's company can be represented near the corner D (i.e., high socializing, low purchasing) of this plane. However, when a group of people come together to buy a joint gift for someone, it is more natural that their primary objective is the procurement of the gift and this scenario will lie towards corner B (i.e., high purchasing and low socializing) of the plane.



Figure 1. Collaborative Shopping Objective Plane

A Design Perspective on Online Collaborative Shopping

Given the varied objectives of collaborative shopping, any website designed to support the activity should be able to serve the diverse needs of the shoppers. Thus, there should be a *fit* between the shopping objective and the system features provided. Figure 2 depicts the conceptual framework for this fit. We posit that depending on the shopping objective of a consumer, different website features will have different consequences on the shoppers' satisfaction derived through the process and the outcome of the collaborative shopping.

In other words, by having features that are compatible with the needs of the shoppers, the website can result in higher satisfaction with the shopping process. Shoppers can be satisfied with the shopping process and with the outcome of the shopping. Thus, there are two aspects of satisfaction – outcome satisfaction, which reflects shoppers' contentment with the outcome of the overall shopping process (such as their decision regarding the product to be purchased); and process satisfaction, which indicates the contentment of shoppers with the

method and manner in which they arrive at the said decision. Depending on shoppers' objectives, different website features will have different impacts on the satisfaction derived from shopping. A direct implication of higher satisfaction is customer loyalty, which in turn can result in stronger purchase intention and more repeat purchases being made. Thus, website features supporting collaborative shopping should be able to enhance customers' satisfaction with the overall shopping experience.

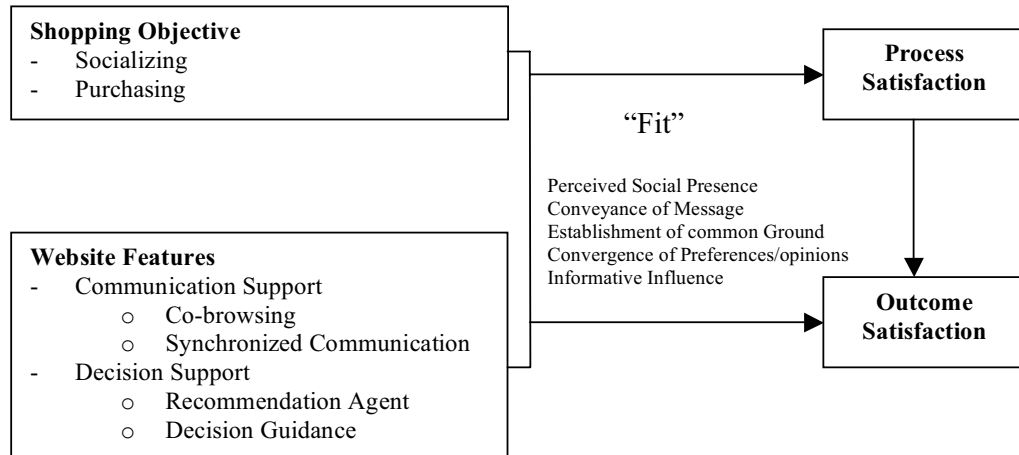


Figure 2. Collaborative Shopping Framework

Before proceeding to discuss the supporting features and the implications of a fit between them and the shopping objectives, we first define our dependent variable, which is “satisfaction”. Users’ satisfaction with a system is an effective measure of the success of the system as it is a surrogate measure of system effectiveness (Ives et al. 1983). Regarding satisfaction, Bailey and Pearson (1983, pp. 531) have stated that, “satisfaction in a given situation is the sum of one’s feelings or attitudes toward a variety of factors affecting that situation.” The two most widely examined dimensions of satisfaction, which are also considered in this study, are outcome satisfaction and process satisfaction. Outcome satisfaction measures the contentment of the group members with the group’s decision and affects the commitment of the group to its decision (i.e., product purchased), while process satisfaction measures the contentment of the group members with the method and manner in which the group arrives at the said decision (Raman et al. 1993). The tangible implication of higher satisfaction is customer loyalty, which could lead to higher purchase intensity (Shankar et al. 2003).

Features to Support Socializing

Socializing is an important aspect of collaborative shopping and happens naturally in the offline setting. But in online collaborative shopping, features have to be explicitly incorporated into the website to support social interaction among shoppers. Existing communication research has identified different aspects of communication, such as conveyance and convergence (Dennis and Valacich 1998), or used communication theories, such as Media Richness (Daft and Lengel 1986) and Media Synchronicity (Dennis and Valacich 1998), to guide the selection of appropriate media for different communication requirements. These theories cater toward explaining communication in the organizational context, where the task is often well defined and the search and decision environment is

adequately delineated. However, in the context of collaborative shopping, there might not be any well-defined task. This is further complicated when the objective is socializing.

Irrespective of the nature of the task, the basic requirement of any kind of collaborative activity is to communicate – the process of exchanging information between two or more parties. Thus, any website for collaborative shopping should be able to support synchronous communication among shoppers. This can be done through text-based, audio or video chats which allow shoppers to communicate with each other. At present, a few online shopping websites have started incorporating text-based chats (e.g., www.happychristmas.com). A synchronous text-based editor does serve to meet the basic information processing requirements of the shoppers; however, it is far from offering the kind of interaction that one experiences in the real world.

According to the *theory of social presence*, the “evidence that the other party is attending” is a critical feature in the promotion of socially meaningful interaction (Short et al. 1976). Social presence is the degree to which individuals perceive others as being physically present during the communication process. It helps in establishing warm and personal connections between people in a communication setting. To this end, researchers have indicated that a communication medium that is capable of conveying a high number of communication cues (e.g., different vocal tones, facial expressions, eye contact, etc.) should lead to higher levels of social presence (McGrath 1984). This, in turn can have a direct impact on arriving at mutually agreeable decisions (Lewicki and Litterer 1985) and increase satisfaction (Gunawardena 1995). Further, an important experiential aspect of offline shopping is enjoyment (Morris 1987) which might be one of the psychological impacts of social presence (Lombard and Ditton 1997). In an online context, this suggests that it may be beneficial to include audio chats on top of the usual text-based chats to transmit verbal cues during communication. Indeed, some studies (e.g. Anderson et al. 1999) have reported that audio chats are often preferred by users over text-based ones, as it is easier to talk than reading through message boards. Moreover, talking is a more natural thing to do when shopping than typing out messages. At the next level, video chats could be incorporated to provide higher level of social presence, by transmitting verbal as well as visual cues. Therefore features that increase the perceived social presence during collaborative shopping will have a better fit with the shopping objective of socializing and will lead to higher levels of satisfaction with the overall shopping process.

Proposition 1a: *Features supporting synchronous communication (text, audio and video chats) can result in higher process satisfaction in collaborative shopping by providing social presence.*

Incorporating chat features is the first step towards enabling social presence by allowing shoppers to communicate with others. However, to proceed further, we first need to gain a more in-depth understanding of social presence. Social influence which is manifested through social presence can be either informational influence or normative influence (Mangleburg et al. 2004). Informational social influence refers to the influence to accept information obtained from another as evidence about reality, whereas normative social influence encourages each individual to comply with the expectations of others. Peer influence on teenagers’ consumption behaviors, influence of family communication, and influence of shopping with friends are a few among the many different forms of social influence, which could affect consumer behavior during the purchase (Mangleburg et al. 2004; Moschis and Churchill 1978).

In the context of online collaborative shopping, when the objective is to make a purchase, informational influence is likely to be more relevant, however when the purpose is to socialize with others, normative influence becomes more salient. Individual shoppers are subjected to both informational and normative influence by communicating with friends or close ones they are shopping with. Research has indicated that shopping with friends often reduces the perceptions of risk and uncertainty associated with a purchase decision and increases the buyers' confidence that a better decision has been made (Kiecker and Hartman 1993), thus resulting in higher satisfaction with the outcome of the shopping process. Moreover, if the technology does not facilitate informational influence when required, it will lead to dissatisfaction with the overall shopping process. Thus, communication features facilitating informational influence not only increases outcome satisfaction, but also reduces process dissatisfaction.

Proposition 1b: *Communication features supporting informational influence can result in both process satisfaction and outcome satisfaction in online collaborative shopping.*

Normative social influence, on the other hand, can result in individual shoppers to conform to the expectations of peers and like-minded individuals. Normative influence might motivate the individual to engage in a behavior that is considered desirable by important others by modeling his/her buying behavior in accordance with the buying patterns of the other members of the group. For example, when two people are shopping together, the purchase made by one of them can actually instigate an unplanned impulse buying behavior in the other person.

Such impulsive buying behaviors can be explained by the elaboration likelihood model (Petty and Cacioppo 1986) which posits that persuasive social influence can occur either through a central route when elaboration is high or through a peripheral route when elaboration is low. When elaboration is through the central route, people are motivated and able to think about the contents of a persuasive message, while in the peripheral route an individual is not guided by his or her assessment of the message, but rather decides to follow a principle or decision-rule derived from the persuasion situation. In our context, we can consider the friend's purchase behavior as the message, which can trigger the peripheral route to persuasion that involves less elaboration, and result in the individual making a same or similar purchase. Moreover, by buying something which conforms to the expectation of peers and other group members, an individual is likely to feel that he is being positively evaluated by others, and this will increase his satisfaction with the overall buying process.

Thus, online collaborative shopping websites should provide features that can support the manifestation of social influence (both normative and informational). Informational influence and to a certain extent normative influence can occur through chat features provided, the website should be able to provide features that allow the shoppers to share their consumption behaviors with others. For instance, a shared navigation tool where each person is browsing on his own, but at the same time able to see the web pages that is being viewed by others is one way of enhancing normative influence.

A website could provide users the possibility of showing the objects in his shopping basket to the other members of the group. MultECommerce, a prototype framework for collaborative shopping proposed by Puglia et al. (2000), suggests similar features where users can browse on their own, but at the same time have an over-the-shoulder look into the web pages that the other members sharing a same shopping session are viewing (See Figure 3). Furthermore, after adding goods to their individual shopping baskets, they have the option of

making items in the shopping basket either public or private, where public items can be seen by other group members as well.

By seeing what others are buying, the individual might be influenced to make a purchase of his own. Therefore, such features can influence the outcome of the shopping, irrespective of the initial objective and can result in higher volumes of sale for vendors.

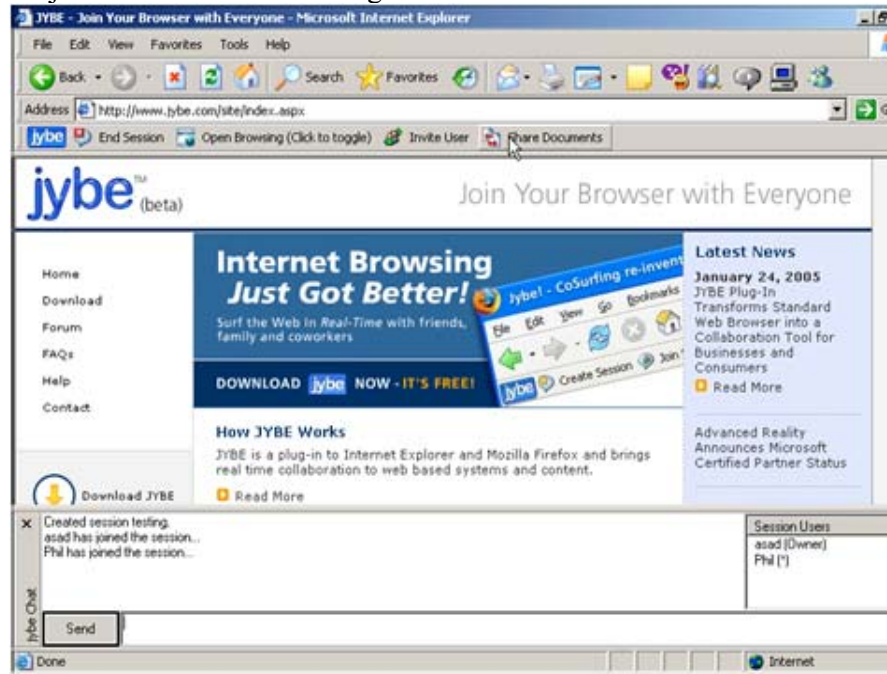


Figure 3. A Commercial Illustration of Chat and Co-browsing (source: www.jybe.com)

Proposition 1c: Features that facilitate normative influences such as shared navigation and sharing the shopping basket can lead to higher process satisfaction in online collaborative shopping.

Proposition 1d: Normative influence in online collaborative shopping can influence the outcome of the shopping, irrespective of what the initial objective was.

Features for Purchasing

Collaborative shopping with purchasing as the primary objective is akin to a group decision-making problem – multiple shoppers seek information and jointly process this information in order to acquire a product or service. The decision-making process essentially consists of three phases – information collection, individual preference formation and finally the aggregation of preferences and consensus building regarding what to purchase. To provide support for joint purchasing the emphasis should be on website features that have abilities to congregate product information, to establish a mutually shared common understanding among the shoppers and to direct shoppers toward an acceptable purchase.

Websites can reduce shoppers' cognitive load of information processing by incorporating recommendation agents which gather product information and provide personalized suggestions. Currently there are two main commercial implementations of recommendation agents - collaborative filtering and content-based recommendation (Herlocker et al. 1999). Collaborative filtering works by collecting feedback from consumers regarding their

purchases and attempts to match the individual shopper's preferences with similar experiences and opinions of people who have purchased a similar product earlier (Figure 4).

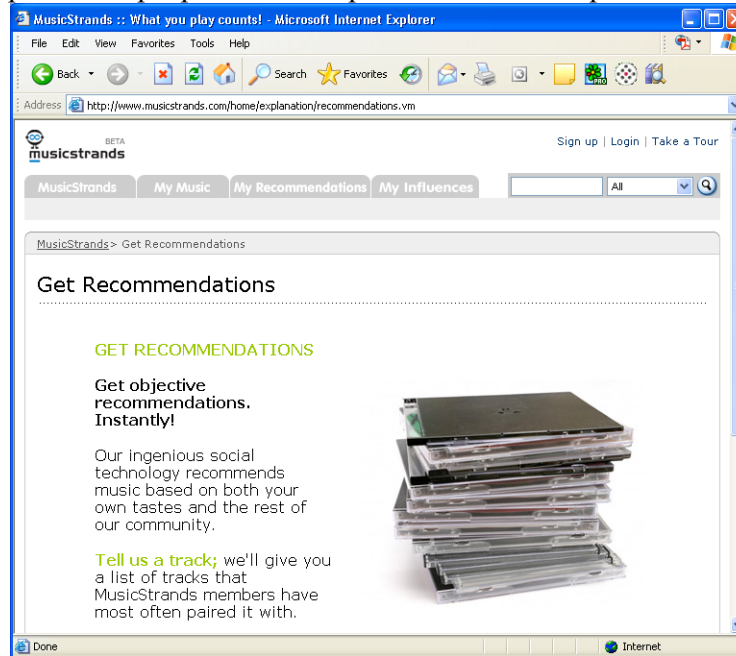


Figure 4. A Commercial Illustration of Collaborative Filtering (source: www.musicstrands.com)

Context-based recommendation provides recommendations by matching representations of content pertaining to a product (e.g., price and warranty) to the criteria delineated by the shoppers (Figure 5). The key difference between the two implementations is that while content-based agents only rely on shopper's pre-specified criteria to provide recommendations, collaborative filtering aims to provide recommendation based on prior purchase history of other shoppers having similar profiles. Collaborative filtering is more versatile because it can provide recommendations to shoppers that are relevant to them but beyond the criteria delineated by them. Thus, collaborative filtering is commercially more widespread (Resnick et al. 1994).

The current implementations of recommendation agents primarily cater to individual online shopping. However, for the purpose of collaborative shopping they could be enhanced to provide recommendations by taking into consideration the interests and preferences of multiple persons rather than each individual. For instance, the recommendations could either be based on a union of, or an intersection of the individual preference criteria of each member of the shopping group. This can facilitate shoppers to converge on a decision by reducing the cognitive burden on each person to negotiate with others. This in turn can lower process dissatisfaction arising from the hassles associated with information gathering, and, improve outcome satisfaction due to the tailored recommendations received. Thus, by enabling convergence of preferences and opinions, recommendation agents can result in higher outcome and process satisfaction among the shoppers.

Proposition 2a: *Provision of recommendation agent should lead to higher outcome satisfaction and process satisfaction.*

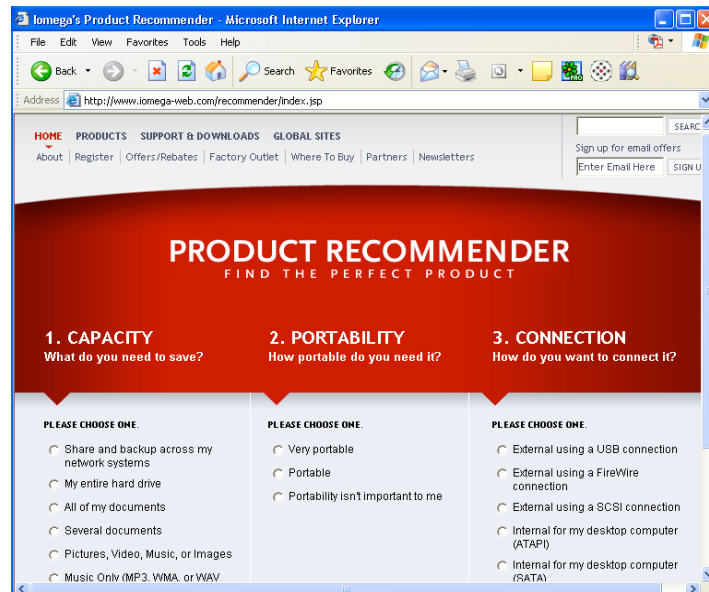


Figure 5. A Commercial Illustration of Content-based Filtering (source: www.iomega-web.com)

After the information has been gathered, the next step is to evaluate this information. For fruitful evaluation, all shoppers should be equally equipped with the information and the mutual knowledge that the others also possess this information. To establish this mutual understanding among shoppers, websites can incorporate features that allow two or more shoppers to view the same object on the website together, such as co-browsing (see Figure 3). In co-browsing, two or more people can browse through a website in a master-slave manner, where one user guides the other user towards specific items in the online shop. While different users have their own browser windows open, the navigation is controlled through a shared pointer. Thus, at any point in time, all shoppers are viewing the same web page and common understanding is established between them.

Though the concept of co-browsing is relatively uncommon in the context of online shopping, there are several examples of implementation of this feature in online collaborative groupware which provide features such as shared sketchpad or where multiple users can work on one single document and the pointer is shared between them. Another example of cooperative browsing is that of a commercial software application called HumanClick (www.humanclick.com), which allows online vendors to monitor the browsing activities of their visitors, and escort them through the website by co-navigation and a shared pointer. At its current stage, this feature is one-way, where only the vendors have the control and they can guide the shoppers through the web-store. We recommend that this feature should be available to all shoppers when shopping together, such that shoppers themselves are able to guide each other through different sections of the web-store.

The incorporation of this feature can influence the online shopping experience in multiple ways. By enabling all the shoppers to view the same information together, it will ensure that information is evenly distributed among all and there is no ambiguity regarding what information is salient. This will result in a shared common understanding or common ground between the shoppers. Moreover, when a decision has to be made regarding what item to procure, it will assist in the process of convergence on a decision because everyone has similar interpretation of the information. At the same time, by reducing chances of getting lost in the navigation path, it will result in less time being spent in navigating through the

store, and thus make the shopping process more efficient. Overall, we believe that this feature can lead to a more satisfying shopping experience for online collaborative shoppers.

Proposition 2b: *By helping to establish a common ground between shoppers, joint navigation features are likely to have a positive effect on the convergence and efficiency of the shopping process and result in higher levels of process satisfaction.*

After necessary information has been gathered and mutual understanding has been established, shoppers can start evaluating the recommended alternatives. The website can provide features which aid shoppers in evaluating the alternatives and making a decision, at the same time provide guidance on how to appropriately choose and use the system features in their decision-making process. Decisional guidance refers to the means in which the decision aid “enlightens or sways its users as they structure and execute their decision making process – that is, as they choose among and use the system’s functional capabilities” (Silver 1991, pp. 157). Particularly, decisional guidance enables users to appropriately choose and use the system’s functional capabilities in their decision-making process (Montazemi et al. 1996). According to Silver (1991), decisional guidance can be distinguished into informative guidance (provision of pertinent information without suggesting the course of action) and suggestive guidance (what to do, what input values to use).

For informative guidance, some researchers have specifically proposed the incorporation of cognitive feedback into computerized systems (Singh and Ginzberg 1996). In general, they observe that embedding informative guidance into support system allows the system to monitor users’ behavior and provide cues and customized explanations accordingly (Gregor and Benbasat 1999). Extending this to online collaborative shopping systems, the system could provide feedback cues to all members of the groups based on their actions related to browsing the site and product search.

For suggestive guidance, researchers have suggested the introduction of facilitation (human and automated) in GDSS-support sessions (Dennis and Garfield 2003). In general, they observe that the provision of facilitation contributes to a higher level of group process gains than do non-facilitated support sessions (Kwok et al. 2003). In the context of online collaborative shopping, suggestive guidance can be provided by incorporating decision agents that can act as an automated facilitator for the group’s shopping session where the agent can learn from the actions of the different group members and make suggestions based on this learning.

Embedding both forms of decisional guidance into group-level decision-making can yield significantly better results. For instance, Barkhi (2001) investigated the effect of problem structuring and modeling with a GDSS on coordinated decision-making of managers in a group faced with mixed-motive production-planning task. The study shows that a two-phase decisional guidance to support collaborative decision-making: divergent phase using problem-modeling tools (informative guidance) and convergent phase using what-if tools (suggestive guidance) lead to higher performance in comparison to groups using a GDSS without a problem modeling tool. In Barkhi’s (2001) study the divergent phase focuses on modeling the problem with the best available information and finding one’s individual optimal solution using a problem-modeling tool, and the convergent phase focuses on using the what-if tool to propose solutions to other members, check the neighborhood of solutions, evaluate the solutions that others propose, check the neighborhood of the solutions proposed, and update private information with the new information. Given the similarity between the online collaborative shopping task and mixed-motive managerial problem solving task, we

conjecture that the provision of decision guidance can facilitate the shoppers in choice convergence, which in turns lead to higher satisfaction.

***Proposition 2c:** Provision of features for decision guidance can assist shoppers in arriving at a mutually acceptable decision which results in a more efficient convergence on a decision, and thus higher process satisfaction, and higher outcome satisfaction.*

Discussions and Implications

This study identifies the objectives of collaborative shopping (i.e., socializing and purchasing) and proposes various website features (communication support and decision support) to support these objectives. We argue that the better the fit between the shopping objective and website features provided, the higher the process satisfaction and outcome satisfaction. More specifically, the introduction of communication and group decision making supports features in e-commerce websites can transform individual shopping into collaborated online shopping.

By drawing analogies from the real world offline shopping phenomena and computer mediated group decision-making, we arrive at a probable list of features for communication support and decision support in the context of online collaborative shopping. Because online collaborative shopping is a relatively new concept, we feel that this is one of the most appropriate ways of proceeding towards a theoretically guided design paradigm for online stores supporting collaboration among shoppers. We believe that the website should not only provide tools for communication support (e.g., chat, cooperative browsing), but also for decision support (e.g., collaborative filtering at the group level). Given a myriad of objectives or reasons for which people shop together in groups, we faced an immense amount of complexity in analyzing the collaborative shopping process. Our basic proposition is that for shoppers, shopping objectives can vary from socializing to purchasing and combinations of different magnitudes of these. In this study we suggested a framework which can cater to these varying objectives, and reviewed and presented a list of website design features, which are sufficiently generic to support varied requirements that shoppers have. Overall, we believe that features supporting communication (such as chat) may suffice for shoppers with intent for socializing, and features supporting decision-making (such as co-browsing and decision guidance) may be more suitable for shoppers with purchase intention. By considering one possible scenario at a time, it is possible to identify design features at a more detailed level of granularity.

Before elaborating more on the implications of this study, it is important that caution is exercised with respect to the interpretation of the framework. This framework is not intended to be a definitive prescription of the features to be provided but rather serves as a conceptual guideline that will hopefully, initiate further research on online collaborative shopping.

In spite of the above limitation of the paper, our contributions can be broadly classified under the following two heads (see Table 1).

Online shopping is not only for purchasing. First, we believe that successful websites should not only focus on providing features that support individual purchases or on directing consumers towards making a purchase without considering an important aspect of shopping that involves socializing and social interaction among shoppers. By addressing some of the social needs of shoppers, online shops can target a select forte of shopping (i.e., collaborative shopping) which has been previously neglected. Off late system designers and e-commerce vendors have started recognizing the importance of addressing social needs of shoppers,

which have resulted in a spate of research directed towards incorporating more ‘human-oriented’ features in e-commerce websites (e.g., support for communities of interest in ebay.com). However, most of these efforts have been fragmented. We believe that before going into detailed design of e-commerce websites to support collaborative shopping, it is important to get a high-level view of the complete collaborative shopping process (e.g., understand the dynamics involved when people shop in groups and the different objectives they aspire to fulfill). Towards this end, we have provided an initial framework for practitioners to identify and classify consumers based on their shopping objective.

Table 1. Summary of features proposed

Design Feature	Function	Shopping Objective(s)
Text based chat	Support synchronous communication	Socializing and purchasing
Audio chat	Same as text based chat except including the facilitation of verbal cue transmission	
Video chat	Same as audio chat except including the facilitation of visual cue transmission	
Collaborative filtering agent	Provide recommendation based on matching shoppers’ preferences with similar experiences of prior users/purchasers	Purchasing
Content-based agent	Provide recommendation based on shopper’s input	Purchasing
Co-browsing	Coordinate web navigation of multiple shoppers	Socializing and purchasing
Decision guidance	Aid shoppers in evaluating purchase options	Purchasing

Guidance for designing websites. Our study provides some guidelines for designing websites supporting collaborative shopping. For instance, to support socializing, the website could provide communication tools that allow shoppers to interact among themselves such as text, audio and video chats, cooperative browsing. To meet the informational and decision making needs of shoppers when making the actual purchase, the website could provide features for decision making such as recommendation agents and collaborative filtering at the group level among others. We believe that features supporting communication (such as chat and co-browsing) may be sufficient for shoppers who are less intent on acquiring a product, whereas shoppers with an objective of product procurement but diverse and unclear preferences are likely to benefit from decision support features such as collaborative filtering which facilitate the convergence on a purchase decision. Incorporation of such features could result in higher customer satisfaction, which in turn can translate into higher sales volume for online vendors. It should be noted that the features suggested here are more for illustrative purposes and the actual implementations could be different variants of the suggested features depending on technological and commercial feasibility. In this study, we have strived to provide guidelines to both practitioners and researchers on identifying the website features that can meet the specific needs of online collaborative shoppers, an area which is as of yet little explored, and can thus open new revenue streams for online vendors

Conclusion

Shopping is a social activity that people enjoy doing along with friends and close ones. While marketers and advertisers have long recognized this social aspect of shopping, IS researchers and practitioners have started doing so only recently. This article aims toward providing guidelines to website designers for building more socially oriented e-commerce websites, and also to lay down future research directions. To this end, we provide guidelines for website designers, and delineate future research directions. We believe research on online

collaborative shopping deserves more attention not only with the sole purpose of advancing research, but also for its practical contributions toward making online shopping a success.

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