VIRTUAL COMMUNITY IN FINANCIAL INSTITUTIONS: DEVELOPMENT OF THE VIRTCOMM SCALE

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This research draws upon the consumption community and virtual community literature to compile a questionnaire that measures a sense of virtual community among customers of financial services providers. Mall patrons and business administration students completed the surveys, which were analyzed using exploratory and confirmatory statistical methods. The 12 proposed components of virtual community were refined to a five-item VirtComm Scale, which is composed of the characteristics deemed relevant by the survey respondents. Implications of the VirtComm Scale are discussed and recommendations are provided for the configuration of virtual communities of customers of financial services firms.

INTRODUCTION

Sixty-seven percent of adults now use the Internet, an increase of over 42 percent since 2000 (February-March 2005 Tracking Survey 2005). In the last five years the use of online banking has grown 128 percent, from 18 to 41 percent of adults. The Internet is also home to highly successful, unique sources of consumer goods such as eBay and Overstock.com. And the Internet has attracted consumers to the sites of well-known conventional retail firms such as Wal-Mart, Best Buy, Toys R Us, and Target. And during the 2005 Christmas shopping season online shoppers in the U.S. set another record, spending $30.1 billion dollars, an increase of 30 percent over the previous year (Wrolstad 2005).

As consumers have increasingly relied on the Internet so has the interest of marketing scholars. Studies have been conducted on participant behavior in virtual communities (Hausman and Minor 2001; Bagozzi and Dholakia 2002; Kosinets 2002; Dholakia, Bagozzi, and Pearo 2004; Hennig-Thurau et al. 2004; Carter 2005), Internet site service quality (Tsikriktsis 2002; Kuo 2003), retailing (Wilson-Jeanselme 2001; Wolfinbarger and Gilly 2001), satisfaction (Langerak et al. 2004), loyalty (Rosenbaum and Ostrom 2001; Anderson and Srinivasan 2003; Shankar et al. 2003), and website consumer behavior (Evans et al. 2001; Sultan 2002; Lim et al. 2004; Vrechopoulos et al. 2004). These efforts have determined that virtual communities contribute to website success.

At the same time, other studies seem to indicate that virtual community websites may not be profitable (Barnatt 1998; Bughin and Hagel 2000). Sites such as garden.com were money-losing propositions. This leads to the question, "are virtual communities being run effectively?" Since there has been no quantitative study of the website attributes that promote and encourage a sense of community in virtual settings, the question has not been answered. Furthermore, the nearly universal deployment of websites by financial institutions makes site differentiation a strategic priority to achieve a sustainable competitive advantage. And pure-play Internet banks have not been as successful as traditional banks that offer online services to complement their traditional facilities (Dandapani 2004). This research addresses not only the issue of effectiveness, but also formulates a quantitative measurement of a sense of virtual community to build stronger relationships with bank customer and credit union members. The result is a

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quantitative measurement of a sense of virtual community, complementing prior Internet research

VIRTUAL COMMUNITY

Virtual community is conceptually grounded in the notion of the consumption community. As immigrant and ethnic communities were assimilated in America, they were replaced by communities of consumers bound together by the mass-produced goods they bought and used (Boorstin 1973). An investigation of the consumption community concept was undertaken by Friedman and his colleagues (1993), who identified a weak but discernable recognition among MBA students in the U.S. and Belgium of similarities in their consumption patterns. At least two ethnographic studies have also identified communities of consumers. Belk and Costa (1998) examined a community gathering known as the Mountain Man Rendezvous, a group of individuals dedicated to the preservation of a somewhat mythical image of frontier self-reliance and independence. Another ethnographic study explored the culture of motorcycle bad-boys (and girls) (Schouten and McAlexander 1995). They identified a process of immersion into the culture of the H.O.G. community, dedicated to the love of Harley-Davidson motorcycles. Other qualitative studies have explored the Star Trek subculture of consumption (Kozinets 2001), and virtual communities of adults obsessed with the Disney culture (Hausman and Minor 2001). Among the newest and fastest-growing virtual communities address the interests of the podcasters and bloggers.

The concept of virtual community is also grounded in the notion of social capital, which measures civic-minded attitudes and behavior, and community spirit (Putnam 2000). Putnam asserts that there has been a significant decline in volunteerism, participatory democracy, civic life, and social involvement since 1965. In addressing the subject of virtual communities he admits that he is uncertain whether they can be formed on the Internet. Similar sentiments were expressed by Jones (1997). This concern has been answered by several empirical studies (McLaughlin et al. 1997; Hausman and Minor 2001; Rosenbaum and Ostrom 2001).

Barnatt (1998) suggests that a virtual community is "any group of people who share a common bond, yet who are not dependent on physical interaction and a common geographical location in order to sustain their group affinity." The definition is applicable to this research because it incorporates commonalities in consumption (Boorstin 1973; Schouten and McAlexander 1995) and a sense of belonging to a unique group (McLaughlin et al. 1997; Hausman and Minor 2001; Rosenbaum and Ostrom 2001).The work that remains is the formulation of a quantitative means of measuring the qualitative aspects of virtual communities.

Elements of Virtual Communities

McMillan and Chavis (1986) define "community" as a feeling that members belong to a group, that there are meaningful relationships among one another and as a group, and that their needs are fulfilled through faith in their mutual commitment to one another. They assert that communities are composed of four elements: 1.) *membership*, 2.) *influence*, 3.) *integration and need fulfillment*, and 4.) *shared emotional connection*. These four elements are applicable to virtual communities, and are recognized in the literature.

Membership, the first element, is the affiliation of each individual with the group (McMillan and Chavis 1986). Group members perceive the similarities of those within the group and the differences of people outside the group (Wellman and Gulia 1999). Attaining a critical mass of membership is ultimately necessary for the survival of all virtual communities (Williams and Cothrel 2000). Members of the community also benefit by aggregating their purchasing power to obtain goods and/or services on more favorable terms. Membership size and composition are also affected by the success of the community in managing *influence*, *integration and need fulfillment*, and *shared emotional connection*.

Influence is the power of individuals to define the group, and the power of the group to affect its members (McMillan and Chavis 1986). The ability of individuals to influence a group to which they belong attracts them to it. Two additional factors act in concert: cohesiveness and conformity. Conformity to group norms promotes cohesiveness, while failure to conform to group standards results in a loss of membership status. Thus a virtual community can influence members to conduct more business with them by networking with other firms (Barnatt 1998), calling upon the knowledge and experience of experts, and forming strategic alliances (Williams and Cothrel 2000). Members of a virtual community may exert their influence on the group by recommending such alliances.

Integration and need fulfillment, the third element, refers to the power of the group to unify members by satisfying their individual needs (McMillan and Chavis 1986). They do so through the creation and use of shared conventions and language such as jargon and acronyms (Bagozzi and Dholakia 2002). Groups reinforce members' desires to maintain affiliation with the group through reinforcement of the rewards of membership. These rewards must be consistent with the shared values of the individuals in the group so that their needs are fulfilled. Virtual communities engage in this element through website content (Williams and Cothrel 2000; Zhao 2001). Specifically, they can promote customer education, new products and services (Barnatt 1998), and provide price incentives and loyalty programs for existing products and services (Zhao 2001). Creation of auction-like environments can also contribute to this process (Barnatt 1998). Interactivity (Zhao 2001) between virtual community members and outsiders is encouraged by the vineofsouls.com website, which pays members who persuade their friends and acquaintances to purchase CDs sold at the site (Kerner 2001); these individuals are called "Pollinators." Such interactivity achieves successful *integration and need fulfillment* by making the customer part of the product or service (Barnatt 1998).

In communities there is a *shared emotional connection* (the fourth element) between individual members, and the community (McMillan and Chavis 1986). Interaction between group members bonds them together; shared positive experiences with the group increase the strength of bonding with the group. This makes it possible for members to commit themselves to communal goals, and enables them to obtain benefits similar to members of traditional communities (Bagozzi and Dholakia 2002). Being able to enter and navigate the website easily or easier than a brick-and-mortar store makes it possible for members to share this emotional connection (Mathwick 2001; Zhao 2001). Pollinators (Kerner 2001) are also an excellent example of making customers part of the product (Barnett 1998), and thus this interactivity (Zhao 2001) is as important to a *shared emotional connection* as it is for *integration and need fulfillment* (McMillan and Chavis 1986). A successful *shared emotional connection* also nurtures and strengthens relationships (Williams and Cothrel 2000), and increases loyalty (Bobbitt 2001).

THE VIRTUAL COMMUNITY SCALE

Twelve questionnaire items directly address the McMillan and Chavis (1986) elements of *influence*, *integration and need fulfillment*, and *shared emotional connection*. Collectively these 12 items address the *membership* element. The logic of this research is simple: a virtual community exists if *influence*, *integration and need fulfillment*, and a *shared emotional connection* are present. Hence membership in the community is defined by boundaries that distinguish group members from nonmembers (McMillan and Chavis 1986; Bagozzi and Dholakia 2002). If they are not present there is no community, and thus no membership. The first three items of the scale address a desire to participate in website design, a sense of communality with other customers, and a financial institution's obligation to provide a high-quality website. The remainder list capabilities found on websites.

Influence

To measure the desire of members to *influence* a virtual community, questionnaire items address input regarding website design, the ability to communicate with the firm's employees, and the opportunity to express one's opinion regarding products and services. The consumer's expectation that the firm will influence him or her is addressed in a questionnaire item that asserts that the firm should provide a compelling reason to visit its website. These four items were identified in recommendations by Williams and Cothrel (2000), and the item that addresses the opportunity of customers to offer their opinions is consistent with findings obtained by Pitta and Fowler (2005). Hence the expected contribution of the element of *influence* suggests:

H_{1a}: The ability of customers to exert *influence* on a firm via its website is positively related to a sense of community.

Integration and Need Fulfillment

Measurement of *integration and need fulfillment* (McMillan and Chavis 1986) is addressed by six questionnaire items. Two items address a customer's desire for information: the first is educational information regarding household budgeting and personal finance, and the second is information regarding current events in the physical community (Williams and Cothrel 2000; Zhao 2001). Three items concern advertising (Zhao 2001): the first addresses a desire to post advertisements on a website to sell items owned by the member, followed by an item addressing the consumer's desire to advertise his/her business on the site. A desire to consult advertisements placed by other members is addressed in the third item. The sixth *integration and need fulfillment* item concerns customers' willingness to participate in auctions and reverse auctions held on the site (Barnatt 1998; Kerner 2001; Zhao 2001; Osmonbekov and Czaplewski 2005). Thus the literature anticipates:

H_{1b}: The ability of a firm to instill in customers a sense of unity via integration and fulfillment of their needs is positively related to a sense of community.

Shared Emotional Connection

The *shared emotional connection* element (McMillan and Chavis 1986) is represented by two questionnaire items. The first measures the extent to which a member believes she/he shares interests in common with other members of the virtual community; the second concerns the desire to communicate with fellow members of the virtual community on the site (Barnatt 1998; Williams and Cothrel 2000; Kerner 2001;). These findings suggests that

H_{1c}: The ability of a firm to instill a sense of a *shared emotional connection* with other customers and the firm is positively related to a sense of community.

Finally, demographic questions regarding respondent gender, age, and relationship longevity are included in the survey to ascertain differences in a sense of virtual community between these groups. Examination of possible relationships between respondent characteristics and a sense of community membership not only provides additional information regarding the marketing benefits of virtual communities, but also assists practitioners promoting their institution's virtual community. No virtual community research has addressed the influence of gender on a sense of virtual community. However, related research has been conducted. For instance, an empirical study found that single women were less likely to be users of automated bill payment and telephone banking services than men (Kolodinsky, Hogarth and Hilgert 2004). And a survey conducted by *Money* magazine survey has found that high school girls expressed less confidence in their knowledge of financial issues, and their ability to manage money, than their male counterparts (Rock 2005). These efforts suggest that women may not be able to establish a strong sense of community. However, Fournier (1998) found that women are capable of forging intensely personal relationships with their favorite products. And a study of municipal communities found that women perceive a greater sense of community than men (Prezza and Costantini 1998). Women have also been found to think of themselves more in terms of their relationships with others than men, who tend to think more about themselves independently of those with whom they have relationships (Cross and Madson 1997). This feeling of interdependence among women enhances their sense of relatedness and connectedness in social groups, as well as their self-esteem. Thus women can be expected to use social bonds to overcome a lack of confidence in their experience with financial services and issues, and ultimately

H_2: Women perceive a stronger sense of community among fellow customers of financial institutions than do men.

From a demographic perspective use of the Internet by women and men is almost evenly matched, with 68 percent of men and 65 percent of women accessing the World Wide Web (February-March 2005 Tracking Survey 2005).

Another demographic characteristic that may detect differences in a sense of virtual community is age. Prezza and Costantini (1998) found a positive relationship between sense of community and age. Age has also been found to be the second-best predictor of civic engagement (Putnam 2000, p. 247). Thus it is expected that

H_3: There is a positive relationship between a perceived sense of community among customers of financial institutions and age.

In this study H_2 and H_3 are the most exploratory of the expected outcomes, as relationship longevity and age have not been examined in the virtual community research. Both are essential for qualitatively improving the relationship between a financial services provider and its customers.

METHODOLOGY

Sample Frame

Two groups in South Texas are surveyed to test the measurement instrument. The first is business administration students attending undergraduate courses at a public university. The second is patrons at a shopping mall. Students are considered appropriate for a test of a virtual community scale because research has identified younger, higher educated customers as a valuable e-commerce target market (Koukova and Ratchford 2001). Inclusion of mall patrons in this study provides a large number of post-college respondents that make the sample more generalizable to the adult population (84 percent of adults aged 18 to 29 access the Internet [February-March 2005 Tracking Survey 2005]). The adult population has also become more appropriate for e-commerce research, as more than 67 percent of Internet users have bought a product online, and 41 percent bank online. Hence the individuals surveyed are likely Internet users, and are suitable for this research.

A total of 505 questionnaires were distributed and returned, of which 330 (65 percent) were completed. Analysis of the survey forms with missing data determined that the most likely reasons for not answering most questions were: 1) the absence of an account relationship with a financial services provider, 2) an unwillingness or inability to respond to specific questionnaire items, or 3) a lack of patience. Thus missing data were not estimated. Women comprise 59.4 percent (196) of respondents, men 40 percent (132), and the remaining two individuals either refused to or forgot to specify their gender. Women are becoming an increasingly important online demographic. They start buying earlier than men (Reitsma Reeve, and de Regt 2000), and 75 percent of women as well as men are comfortable buying online (Kelly and DeMoulin 2001). As expected, usable responses are more generalizable to the adult population: 51.8 percent (171) of the participating individuals were 18 to 25 years old, and 27 percent (89) were aged 26 to 35, and 17.9 percent were 36 to 55 years old. Nine of the respondents were over the age of 55, and two individuals either refused or neglected to specify their age.

Respondents were requested to answer the virtual community questionnaire in the context of their primary financial services provider (PFSP). In the financial services industry the term refers to the institution where 1) an individual conducts most of his/her financial affairs, or 2) one keeps his/her checking account. This was done so that participants could be grouped in terms of relationship longevity and type of institution as part of a larger, ongoing research effort. The respondents are fairly heterogeneous in relationship longevity; the largest group (44.6 percent, 147 participants) had been conducting business with their PFSP for less than two years. One hundred twelve individuals (33.9 percent) had been with their PFSP between two and five years, and 20 percent (66) respondents had been with their PFSP for more than five years. Five individuals (1.5 percent) either did not want to reveal this information, or neglected to answer. Respondents were fairly homogeneous in regard to the type of institution on which they most rely: 263 individuals (79.7 percent) specified a bank, while only 52 (15.8 percent) named a credit union. Twelve (3.6 percent used a savings and loan or a securities firm, and three people did not answer. A fairly large portion of respondents (42 percent) access their PFSP's website, which is identical to the percentage of adult Internet users who access their accounts on line (41 percent).

MEASUREMENT SCALE ANALYSIS AND DEVELOPMENT

This is the first test of this virtual community measurement scale. Thus it is necessary to examine these preliminary results to determine the robustness of the selection of the variables, and hence the robustness of the individual variables.

Exploratory Analysis

The first concern regarding this scale is its reliability. Coefficient alpha for the twelve-item measurement is 0.892. This level is considered to be at the threshold appropriate for applied research by Nunnally (1978, as cited in Peterson 1994). Next principal components exploratory factor analysis is conducted, specifying an unrotated solution. Initial results (see Appendix A) are favorable for all but the third ("I think my primary financial services provider should provide a compelling reason for me to visit their website") and the 11th ("I would like to advertise my business on my primary financial provider's website") scale items, which cross-load with a second factor. Ambiguous results for these two items indicate that customers of financial do not perceive the applicable website capabilities to be relevant in acquiring a sense of *influence*, *integration and need fulfillment*, and/or *membership* in the institution's virtual community. Factor loadings of the other nine variables are fairly high (see Appendix A). Since the third item is one of four representing the *influence* element of community (McMillan and Chavis 1986), deleting it does not impair its isomorphic association with the literature. The 11th item is one of six representing the *integration and need fulfillment* element of community; because it and the ninth variable are redundant, deleting the 11th item removes the weaker, less relevant item.

Coefficient alpha for the 10-item scale is 0.884, substantially the same as that calculated for the original 12 items. Principal components exploratory factor analysis (unrotated solution) indicates that the scale is univariate, with an eigenvalue of 4.915, and recalculated factor loadings from 0.781 to 0.565. Thus the virtual community scale is a reliable and valid measure of a sense of community in cyberspace.

Confirmatory Factor Analysis

Confirmatory factor analysis is conducted using Amos 4.0, employing the maximum likelihood method. Initial results are unfavorable for five of the ten variables (the first, second, eighth, ninth, and tenth items) due to excessive error variances. These problematic Heywood cases (Kline 1998) are resolvable by setting the error variance at a very low level (i.e., 0.005); however, doing so is almost never successful. The practical solution to this problem is to delete the Heywood cases. Doing so results in a univariate virtual community construct comprised of the third, fourth, fifth, sixth, and seventh variables. The construct represents all of the hypothesized elements of community, comprised of two *influence* items, two *integration and need fulfillment* items, and one *shared emotional connection* item that jointly comprise a sense of *membership*.

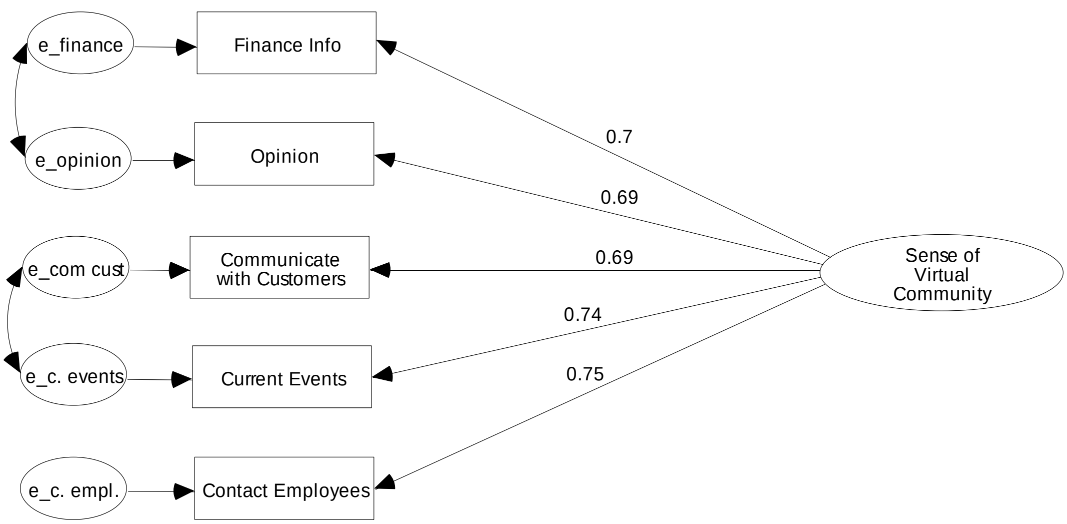
The literature describes the integral nature of the four elements of community (McMillan and Chavis 1986), hence covariances are anticipated, and consultation of the modification indices is warranted. Two such inter-relationships are identified (see Figure 1): the first is between the first and second variables (representing the *integration and need fulfillment* and *influence* elements), and the second between the third and fourth (representing the *shared emotional connection* and *influence* elements). The result is a five-variable construct with excellent fit: Chi-square = 4.624 (p = 0.201), GFI = 0.994, AGFI = 0.972, CFI = 0.998, NFI = 0.993, RMSEA = 0.041 (see Figure 2). Finally, the VirtComm measurement scale is also reliable: construct reliability of 0.612 is calculated using the method prescribed by Hair et al. (1995).

RESULTS AND DISCUSSION

This research makes an important contribution to the study of services marketing by formulating the first quantitative measure of a sense of virtual community—the VirtComm Scale. It also contributes to the external validity of work begun by McMillan and Chavis (1986), and complements the efforts of Rosenbaum and Ostrom (2001). This study also reinforces the notion that people with common goals want to gain knowledge in a group setting (Hemetsberger 2002). And the finding in this research that financial institutions should encourage online contact with customers supports qualitative data indicating that firms should encourage loyal customers to contact firms via bulletin boards or chat rooms (Evans et al. 2001).

Positive regression weights for all five variables of the VirtComm Scale indicate that respondents have significantly positive attitudes regarding their ability to Influence their PFSP in two ways: they want to voice their opinions (increasing their attraction to their PFSP), and they want to communicate with their PFSP's employees (increasing cohesiveness). They also want to be more closely integrated with their PFSP and fulfill their personal needs: they want to obtain instruction in personal finance topics (consistent with their value system), and they want to obtain information regarding current events in the community in which they live (reinforcing their ties with the PFSP and the area in which they live). Lastly, customers want to achieve a *shared emotional connection* with their PFSP by communicating with friends, family, and fellow customers through its website (by interacting with acquaintances). These five items represent all four elements of virtual community formulated by McMillan and Chavis (1986) in their definition and theory of a sense of community, and hypothesized in this study.

FIGURE 1
VIRTUAL
COMMUNITY CONSTRUCT
Chi-Square = 4.624 (3 df)
p = 0.201
ChiSquare/df = 1.541
Standardized Estimates



But results also indicate that respondents do not believe that the other seven website attributes make a meaningful contribution to sense of community. These seven items specifically represent the hypothesized elements of virtual community. Hence the results of this study provide only qualified support for H_{1a}, H_{1b}, and H_{1c}. Specifically, two variables representing the *influence* element (the ability to influence website design and the obligation of the PFSP to provide a compelling reason to visit their website) are not significantly related to a sense of virtual community. Also, the belief that the respondent perceives a commonality with other customers of the PFSP (representing the *shared emotional connection* element) does not significantly contribute to a sense of virtual community. It is noteworthy, however, that there is a practical limit to both the number of capabilities a PFSP can effectively manage, and the number of capabilities customers have time to access. Hence the five-feature, unidimensional VirtComm Scale has face validity.

Hypotheses H_2 and H_3 were tested via analysis of variance. The VirtComm Scale was operationalized by computing summated factor scores for the five variables directly representing the *influence*, *integration and need fulfillment*, and *shared emotional connection* elements, which indirectly operationalize the *membership* element.

H_2 asserts that women perceive a stronger sense of virtual community than men; it is strongly supported (p < 0.01), giving credence to the notion that women are more interested in obtaining information regarding personal finances and current events, as well as communicating with friends, relations, and employees of their primary financial services provider. It also confirms the notion that women tend to be interdependent in nature, and pay more attention to relationships (Cross and Madson 1997). In nurturing these relationships they also enhance their self-esteem. H_3 posits that there is a positive relationship between a perceived sense of community among customers of financial institutions and age. This relationship is one of the fundamental conclusions of a book that discusses the strength of social capital in municipal communities (Putnam 2000). The outcome was a strong *negative* relationship between a perceived sense of community and age. Hence the younger age groups perceived a stronger sense of virtual community at a highly significant $p < 0.001$. To some extent this may be due to the adoption rates of various age groups: 84 percent of individuals from 18 to 29 years of age, 76 percent of those in the 30 to 49 age group, and "only" 64 percent of people aged 50 to 64 surf the Internet (February-March 2005 Tracking Survey 2005). Hence a sense of virtual community may also be associated with the enthusiasm of each cohort for using the Internet.

The VirtComm Scale provides marketing scholars with a means of researching the potency of virtual communities. This research provides a means of comparing the strength of virtual communities with their profitability. The VirtComm Scale is also useful for measuring the joint effects of a sense of virtual community and other factors (i.e., service quality, loyalty, and other measures of consumer behavior). VirtComm can be used to measure the effects of operational performance of websites on customers' perceived sense of virtual community, as well as the relationship between a site's perceived quality as a source of information and users' perceived sense of community. Lastly, the VirtComm Scale is a framework for determining the capabilities relevant to instilling a sense of community in other service businesses (i.e., health care), and retail firms.

Managerial Implications

The VirtComm Scale has at least two uses. First, the results of this study indicate that there are five website attributes that improve the likelihood that users will perceive the site of their PFSP to be a virtual community. Financial services providers who want to instill in their customers a sense of community should seriously consider encouraging them to communicate with their PFSP, reinforcing the notion that customer input is valued and respected, and acknowledging the customer's desire to exert influence on their PFSP. These financial services providers should also make educational and current event information available to their customers, recognizing the need to integrate customers into their virtual community and fulfill their needs. Further, financial services providers should consider providing a means for customers to communicate with each other through their PFSP's website, acknowledging their customers' desire to establish shared emotional connections. To prioritize the website features that will be most effective, financial service providers should circulate the five-item VirtComm Scale to their patrons to determine the kinds of interaction (if any) they want to engage in. Financial institutions that do not explore adoption of website capabilities that contribute to a sense of community may find themselves in a position of competitive disadvantage vis a vis early-adopter institutions.

Financial institutions should also capitalize on the strengths and ameliorate the weaknesses revealed by the results of H_2 and H_3. Financial institutions should encourage women to access their account information and take advantage of financial resources they make available on their website. With respect to H_3 financial institutions should promote the use of their website as a complementary means of account access for their customers in the 50 to 64 age group. As the cost of building, maintaining, operating, and staffing physical facilities continues to increase it becomes commensurately important that financial institutions increasingly rely on technology-driven methods to complement their brick-and-mortar facilities.

Study Limitations

This paper provides guidance for financial services firms that seek to promote a sense of community on their website. Although this research discusses means by which financial services firms can control the cost of operating their website, it does not establish a relationship between a sense of community and profitability. Because the questionnaire items in this study specifically address the websites of financial services providers, generalizability of the results may be limited to firms such as banks, credit unions, savings and loans, and securities firms. Lastly, the results of cross-sectional surveys such as this research should not be construed as possessing any predictive power.

Recommendations for Future Research

Although this effort is an important first step in improving the effectiveness of virtual communities, a great deal of work remains to be done. Future research should be conducted in other sectors of the economy. The entertainment industry is a particularly attractive area for study, as movies and music are frequently "consumed" in social settings or on the Internet. A number of brands attract a devoted following. Apple computers and Harley-Davidson motorcycles are examples. Determining the site attributes that encourage these individuals to bond with each other in virtual space would provide a better understanding of the strength, potency, and/or usefulness of virtual communities. Scholars who do so should begin with the 12-item sense of virtual community scale, modified to address the product or service under inquiry. Another direction for research would be a study of the relationship between virtual community facilities and website profitability. Finally, the value of these suggested efforts would be magnified many times if both cross-sectional and longitudinal studies were conducted.

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APPENDIX A
VirtComm Scale Items

Item No.	Measurement Item[1]	Factor Loading
1.	I would like to contribute to the design/layout/content of my primary financial services provider's website.	.612
2.	I believe that I share a great deal in common with other customers of my primary financial services provider.	.556
3.	I think that I share a great deal in common with other customers of my primary financial services provider.	.512
4.	I would like to obtain household budgeting and other personal finance instructional information from my primary financial services provider's website.	.725
5.	I would like to have opportunities to express my opinions regarding matters important to me on my primary financial services provider's website.	.687
6.	I would like to communicate with my friends, family members, and fellow customers through my primary financial services provider's website.	.710
7.	I would like to obtain information regarding current events in my community from my primary financial services provider's website.	.746
8.	I would like to communicate with employees of my primary financial services provider through their website.	.720
9.	I would like to advertise items I have for sale on my primary financial services provider's website.	.745
10.	I would consult listings of items for sale in my primary financial services provider's website.	.747
11.	I would like to advertise my business on my primary financial services provider's website.[2]	.657
12.	I would like to participate in auctions and reverse auctions held on my primary	.681

[1]Note: Response format for all items:

1	2	3	4	5
Disagree				Agree

[2]Deleted in exploratory factor analysis due to cross-loading.
[3]VirtComm Scale items (see Figure 2).