Virtual Community Success: a Uses and Gratifications Perspective

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Abstract

In this study we report the findings of a survey on a virtual community of knowledge and interest for end-users. We approach a community participant both as a member and a user, who is also a virtual value initiator for other members. The central issue raised in this study is: what factors motivate a member to participate in a virtual community of knowledge? We utilize uses and gratifications theoretical framework which is grounded in the functionalist and communication research paradigm to develop scales to be empirically tested in the virtual community environment. We use member need satisfaction as a proxy measure for virtual community success. With the help of a community organizer, we posted our survey to develop the constructs and test the relationship with user satisfaction in a virtual community.

1. Introduction

Managing virtual communities[1] continues to be a challenge despite the assertion that "commercial success in the online arena will belong to those businesses that organize electronic communities" [20, p1]. A few virtual communities (VC), like the transaction community eBay, the education community Smart Force, and the financial community Intuit's Quicken; have proved to be commercially successful by generating revenues and profits. Many virtual communities however, have failed to sustain commercial success, specially as a stand alone model and these are seen as "no vein of gold" [18, p.1]. One reasonable explanation is that in this nascent area of research, a conceptual weakness exists in which most possible factors motivating member participation in virtual communities have not yet been identified. Another explanation attributes to constant transformation of virtual communities' contributory and participatory units; the users or members, and the organizations [26]. For instance, member communication and transaction for digital products or services is constantly affected by an invariably evolving virtual environment. Their contributory and participatory needs, methods, and obtained satisfaction are also different than the physical place communities particularly in spatial and individual relationship terms. It is important to identify what drives member satisfaction and their decision to stay in a virtual community.

The purpose of this paper is to conceptualize and develop independent variables that result in member satisfaction which we use as a proxy measure for a virtual community success. We study this by utilizing and adapting the constructs of uses and gratifications theory (U&G) also known as needs and gratifications theory. It suggests that member selection and continuance use of a virtual community is based on their needs or uses satisfaction or gratification [22, 6]. We propose that functional, emotive and contextual needs fulfillment affects user attitude toward a virtual community. We aim to answer the following research question: what are motivating needs that persuade users to become members in a fee based knowledge community? Underlying question is what are the motivational factors which influence a member satisfaction in a fee based knowledge community? Understanding this will enhance our perception for a sustainable and successful virtual community business model, similar to the importance of studying the online consumer behavior for any other electronic commerce model [48]. Most organizations are hosting virtual communities given that conversion rates of repeat visitors to members in business to consumer (B2C) sites with virtual communities is over 60% as compared to other B2C transaction sites which are only 33% [8]. Community members are twice more likely to purchase online, and up to nine times more likely

[1] We acknowledge the definitional difference between the various terms relating to communities but use the term web, online, and virtual community interchangeably in this paper.

to return frequently to the organisation's transaction websites than non-community members [36]. Yet there is little publicly available information about the functioning of these communities of interest and knowledge [37] from user motivation and satisfaction perspective. These knowledge communities are intentionally formed for specific organizational and commercial gains [49]. Insufficient understanding of this phenomenon is manifested in virtual community websites with empty message boards, ancient posts, unanswered questions, and unused discussion spaces [14].

The paper is organized as follows: After presenting a research background on virtual communities in the next section; we present our theoretical framework and bases for study measures to identify various items of U&G in virtual community research context. As this theoretical context is unexplored in our area of research, we rely on its application in other research areas. Next our methodology explains our empirical data set formulation. In the subsequent section we set to identify U&G dimensions by using exploratory factor analysis, and study their relationship with member satisfaction to validate what motivates member satisfaction in a virtual community. In the final section we discuss the implications of our results in theoretical and managerial context.

2. VC Research Background

Evolving literature on the subject indicates that a virtual or space based community must have several common characteristics to distinguish itself from any other virtual settlement [37]. Some of these characteristics are similar to the physical or place based communities where communities exist for common uses for social interaction, common place or space, and common ties [see 21). Most people share common needs and interests for interaction in the online environment, and live in several virtual communities just like in the physical environment [15]. These aggregations based on common interest when emerge in virtual space, and when large number of members or users engage in social or personal interactions are characterized as a virtual community [40, 20]. These communities have been subject of considerable research in the last few years and an overview of the literature shows a few research characteristics. Major focus of early research is on sociological aspects of virtual communities; the sense of belonging within the community [e.g. 32, 41] through communication and relationship capacities of the networks to build social relationships across barriers of space and time [e.g. 40]. Internet technologies fostered virtual community development by supporting human interaction and relationship that is not dependent upon geography [15]. Preece's [37] study on sociability and usability in online communities extends the sociological perspective by incorporating and reinforcing the information and communication technology contribution in creation of these networks. Another dimension of research rests on value creation through technology mediated network communication and interaction for both users and organizations [45]. In this stream, research on monetary or non-monetary value creation by a virtual community for sustaining itself as a business model or otherwise has received considerable attention in the recent years [e.g. 46]. As a result identification and measurement of value created by virtual communities through quantifiable constructs to align to an organizations revenue or non-revenue objectives has become a critical area for research [see 27, 11].

Research stream dealing with the processes of hosting a virtual community with recommendations for the organizations to increase returns through content attractiveness, member profile, member loyalty, and transaction offering concentrates on sustainable virtual community building strategies [42, 41]. Here, the focus is both on content and context of the operational aspects of virtual communities and it presents valuable insights on technological and behavioral aspects through mainly case study research methods [45].

This overview of prior research indicates that virtual community usage is driven by at least what we identify as three constructs: functional needs fulfillment of required uses by quality of content; emotive needs fulfillment and acceptance of relationship building through interaction and communication in virtual environment; contextual needs that relate to individual user specific expectations and experiences beyond and other than functional and emotive needs. Gratification of these needs

leads to continuance or preference for a virtual community. These constructs are also proposed by U&G which measures perceptual and motivational attitude toward media choice or preference and media content based on users gratification [22, 6]. Measures of U&G theory are grounded in the functionalist and communication research paradigm of social sciences and are widely used in research on advertising and mass media communication [see 44]. Application of its constructs to internet technology mediated environment is evolving and has been applied to the study of website usage [9], and internet usage analysis [16, 44]. Its constructs remain largely untested in the virtual community environment and present a high degree of face validity and development tools for measures. Past research has demonstrated U&G instrument validity (content validity, construct validity [16, 44]. This paper contributes further to the development of the theoretical and practical understanding of this environment through U&G lens.

3. Theoretical Framework and Bases for Study Measures

3.1 Member satisfaction

Satisfaction or gratification is an ex post evaluation of member experience with the community and is conceptualized in related literature as a positive feeling, indifference or a negative feeling [1]. Gratifications are also defined as some or all aspects of satisfaction self-reported by users [see 44]. It can be studied as a surrogate to measure success or failure of a virtual community similar to information systems success or failure to in human computer interaction. In marketing satisfaction is studied as a consumer product or service purchase need satisfaction [25]. We argue that similar to product manufactures and service providers, virtual community organizers remain viable by their task performance and by providing benefits to members. Gratifications are difficult to measure because these are affected by both economic and non-economic factors [see e.g. 19, 9]. We propose that needs fulfillment is a motivator that affects user satisfaction. Below we present theoretical foundations for our research, within the U&G theory, and to develop our measures.

3.2. U&G in Virtual Community Context

U&G theory proposes five categories of uses gratifications namely cognitive, affective, personal integrative, social integrative and tension release needs [22, 43, 6]. Cognitive needs represent the intrinsic desire for information acquisition for knowledge and understanding in an increasingly information rich society while affective needs are related to emotional experiences, and intrinsic desire for pleasure, entertainment and aesthetics. Personal integrative needs derive from individual's desire to appear credible, be perceived as confident, and have high self-esteem. These needs are closely related to an individual's value system. Social integrative needs are affiliation needs where audience want to be part of a group, and want to be recognized as part of the group and relate to sense of belonging. Tension release needs, relate to the need for escape and diversion from problems and routines. The latter three categories can be both intrinsic and extrinsic in nature [22].

Satisfaction of these needs determines the attitude toward media [22, 43]. This attitude in turn leads to individual's choice for the type of media and its content to gratify needs. This attitude formation process can be mediated by other variables affecting the final behavioral outcome, and repeat or continuance usage of media or its content [47, 16]. Our research setting requires internet media as a prerequisite and therefore media preference is not warranted. Our focus is to identify need satisfaction through content gratification. The importance of content gratification in internet media has been validated by earlier research [9, 44].

U&G theory is based on a set of assumptions which include that audience is active and goal directed, thus not a passive recipient of information; the initiative to link need gratification and media choice lies with the individual who has alternative sources of need satisfaction at disposal; media goals or content is derived from the data supplied by the audience, and lastly, culture based media use perceptions are not significant because audience explore gratification in individual context [22, 23].

These needs gratification concern with what members do with the virtual community, and suggest that members will be motivated to select

a virtual community that best gratifies their needs. Prior research shows cognitive need gratification for information acquisition, [44] as one of the principal motivator for VC usage. A virtual community of knowledge may evolve beyond its commercial orientation of fulfilling member specific needs. It may serve several other needs that are beyond contractual agreement through communication and interaction amongst members, or members and the host organization. These needs may relate to users affective needs for entertainment through virtual participation [3] or social integrative needs for sense of belonging through virtual social interaction. Most researchers recognize the interpersonal and social communication use of virtual environment that distinguishes a community from a mere group of individuals [11]. Members can share experiences or insights, solve problems, meet peers at conferences and events, explore social and career opportunities or keep current with developments in their interest area [33,31]. A knowledge base repository can be built up slowly and this repository becomes a valuable information resource for all community members [28]. Virtual community presents personal integrative needs gratification by opportunities for self expression and tension release needs like escape from real world [38].

Information for knowledge and understanding is gained through surveillance or participation [7, 35], and leads to learning [46], better decision making [13, 24], and improved time management [30]. U&G theory suggests that members are active and goal directed, thus not a passive recipient of information. Virtual communities have largely been characterized by their common purpose of interest (leisure time, technology, research or business basis) [20], which has an identified goal for active member participation. Community of is formulated around specific needs as against the broad realm of common interest, and member active participation and content quality central knowledge [39]. U&G theory also suggest that members have alternate choices to satisfy their needs and are aware of these choices and have easier access to these alternatives [22,6]. To continue to use a virtual community, user must believe that it offers better choices than alternatives and quality of content becomes deterministic. The content generation and its quality is dependent upon various mechanisms like interaction by experts, opinion leaders, community host, and member community [34].

An online community operates on policies, in the form of tacit assumptions, rituals, protocols, rules, and laws that guide people's interactions [37]. These rules and regulations are core attributes to moderate content and to shared resources [29] but if a member experience these measures as restrictive, these can negatively affect a members participation in a community. Moderators from the user base act as experts in answering questions and channelling discussion of different topics [39]. Participants gradually begin to develop a sense of shared values and responsibilities and develop sense of credibility and responsiveness, and over time [33]. Large membership and prominent members who are well connected and influential in their areas of expertise instil higher quality and higher faith in the contents [30]. Varied information sources from members of different backgrounds, offer more objective views and insights and value to all [12]. Feedback and comments from other members also provide objectivity on the topics being discussed, giving the members less biased information. Members meet experts, opinion leaders and communicate while learning and generating content. There is an opportunity to forge multiple connections to people and information and to deepen their learning [5].

For virtual community users, spatial convenience of information gathering and sharing, reducing time in receiving information by choice, increased pleasure by ownership of actions and improved decision making, and by being part of a larger knowledgeable community can be seen as critical needs gratifications outputs.

Research Method

A lack of precedence of studies in application of U&G in our area of research led to a two tier research design to develop constructs and validate them. First we developed an exploratory open-ended guideline questionnaire that represented U&G terms in the literature. We used two post graduate students to conduct interviews with ten community members with the help of a community organizer to allow for the sampling of a theoretical construct [e.g. 10]. These students were briefed about the objective of our research and were given the task to

identify most commonly used terminology. Based on our insights we identified two sets of uses (functional and emotive uses) and some subsets that motivate member subscription to a virtual community, and which were related to the member satisfaction to stay in the community. We developed a preliminary research instrument of 23 items to test on another set of 20 community members. Besides some language adjustments our items remained the same for the next stage. In the second stage we used survey method, and conducted factor analysis to group indicative scales into representative independent scales. For our dependent variable we adapt the traditional acknowledgement that need satisfaction is a multi faceted attitude construct and it requires subjective reporting of two scales that measure user satisfaction with the virtual community. It affects users behavioral intention such as choice for virtual community resulting from prior experience. Our dependent variable of *member gratification or satisfaction* was measured on two items: a member's perception of satisfaction, and the outcome in terms of their perceived better control over finances. Finally we use regression analysis to study the relationship between constructs (uses or needs) with the outcome (gratification or satisfaction).

We obtained our datasets from a community of interest and knowledge in the financial sector. This community operates as a business model and the organizers provide expert information in their field against a monthly subscription fee. The members are free to leave the community any time. The organizer have achieved success in their model in the last four years of its establishment and the community has been growing gradually. It has outperformed some its contemporary competitors. In terms of page views it has high hits, because of the quality of its forum and also because it allows free but restricted public access of its selected online forums while only subscribed members can contribute to the content. We selected this case to study as it presents a successful model which is represented by the growing number of subscribers. Lessons from this case study can be applied in other community based business models. The study of a case study is well supported in the IS and other disciplines as a contributor to theory as well as expertise [4,17].

We posted our survey to randomly selected 2000 members with the help of the community organizers.

Table 1 Demographic statistics of survey respondents

Years of Membership with VC		Years of experience with other VCs	
Below 0.5 year	22.8%	Below 1 year	45.8%
0.5 to 1 year	19.5%	1 to 3 years	39.2%
1 to 1.5 years	23.3%	4 to 6 years	10.4%
1.5 to 2 years	15.3%	7 to 9 years	1.4%
Above 2 years	19.1%	Above 10 years	3.3%
Education level of VC members		**Gender of VC members**	
Secondary	12.6%	Female	12.8%
Tertiary	58.1%	Male	87.2%
Higher	29.3%		
Online Hours spent with VC per week		**Age of VC members**	
Below 1	18.6%	Below 20	0.5%
1 to 3	14.9%	20 to 29	28.2%
4 to 6	20.5%	30 to 39	33.8%
7 to 9	11.6%	40 to 49	21.8%
10 and above	34.4%	50 and above	15.7%

The survey request was open for one week and a selection of investment books were offered as incentive to participate in the survey. We received a total of 216 responses (10.8% response rate) and all usable responses. Table 1 shows the descriptive statistics. From the descriptive statistics shown in 1, the following characteristics of our respondents can be deducted : a) about 40% of them are with virtual community for less than a year, b) about 50% of

them have less than one year of experience with other virtual community, c) more than 80% of them have tertiary or higher education. d) majority is male population e) about 50% of them spend more than 7 hours per week on this virtual community f) more than 50% of them are aged 30 and above. This indicates that the members are relatively young, male who have presumably relatively little or no experience with other financial communities. However, most of them spend at least one hour with the community every day. Our data has a fair representation of the members' of our unit of analysis but may not be generalised for other financial communities without caution.

Table 2 : Factor Analytic Results [a]

	Component Loading					
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Eigenvalues	5.68	2.12	1.60	1.21	1.14	1.07
% variance explained	13.44	12.80	8.27	7.94	7.90	5.43
Reliability	0.79	0.76	0.67	0.66	0.63	0.47
Item						
Independent Variables [b]						
Functional Needs						
Information Need						
objective information	.72					
information of high value	.72					
Information for my exact needs	.67					
Expert Information	.63					
Information from opinion leaders	.58					
Trust information for investments	.56					
Emotive Needs						
Social Interaction						
Visit threads		.76				
enjoy discussion and participation		.67				
enjoy virtual companionship		.63				
interaction with people		.62				
large number of membership		.57				
Personal uses						
Meet peer group			.69			
easy to find people in a community			.58			
meet industry leaders and influential people			.53			
Self expression uses						
Express my knowledge				.61		
reader and a contributor				.61		
moderation of content				.52		
community as extension of myself **(deleted)**				.39		
Contextual Needs						
Entertainment						
chat groups					.79	
The site surfing and navigation					.64	
offline expert seminars are useful **(deleted)**					.37	
Host						
rules and regulations						.66
postings from CEO						.64

[a] Extraction Method: Principal Component Analysis. Rotation Method: Varimax (eigenvalue > 1).
[b] Items measures on 5-point differential scale (1= strongly disagree and 5= strongly agree)

Data Results and Analysis

First we tested the reliability of our measures by using a common reliability test of Cronbach's coefficient alpha (0.79). The dimensionality of these measures was tested by the Bartlett's test of sphericity was 1349.6 (*p<0.000)*. Next, we conducted an exploratory factor analysis to assess the unidimensionality of items and to eliminate the items which were not factorially pure (Weiss 1970). The result in Table 2 show that two items were deleted because of their loading was lower than 0.40 [10]. We used principal component analysis with varimax rotation. The result showed six factors with eigenvalue greater than one explaining 55.80% of the variation. We tested their validity and alpha measured: FA1 0.79, FA2 0.76, FA3 0 0.67, FA4 0.66, FA 5 0.63, FA 6 0.47. On the basis of scree plot and reliability results we selected first five factors explaining 50% of variance for further regression analysis. We excluded factor six because of low alpha score which shows measure unreliability [10].

Our factor structure was in consistency with the literature review and not difficult to identify [22,23, 44]. We identified and grouped these factors into three, namely, functional needs, emotive needs and contextual needs. We define *functional uses or needs* as contractual needs which are minimum intrinsic informational requirements that a member expects to fulfill on membership fee payment [see 11]. One example is a financial community where expert advice is given to the investors against a fee but no direct trading is conducted by the community organizers. Functional uses are satisfied with the quality and quantity of content received and processed by the member to fulfill his specific needs according to the goal orientation [see 44]. Emotive needs relate to social interaction, personal uses other than contractual agreements, and self expression through information acquisition and dissemination. These intrinsic and extrinsic needs are fulfilled by acceptance of relationship building through interaction and communication in virtual environment. Contextual needs relate to individual user specific expectations and experiences which facilitate and enhance member participation through non-goal oriented actions like host organization of online or offline activities for entertainment, or technological interactions.

Factor one is characterised by Information Need within the Functional need category. Variables loading on this factor show the importance of finding or acquiring information from objective and reliable sources is important for information use gratification. Factor two to four in general represent member motivation relating to virtual social interaction by participating and interacting with various people in the virtual environment, and personal fulfilment through self expression to feel confident and by meeting peer group and influential people in the virtual environment which they otherwise will not. We characterise this as emotive need. The third category of contextual needs represented by factor five and six relate to activities that individual member seek to gratify such participation in chat groups other than relating to their functional or emotive needs, aesthetics and ease of navigation of the website and offline activities organized by the community hosts.

Next, for further construct validity we regressed five factors against the dependent variable of member satisfaction. Model 1, regressed all five factors to the dependent variable while in Model 2, we used only three main factors. We used factors and not subsets to compare the relationships. Results presented in Table 3 show a better fit for Model 1 (R^2.53). It shows that information need is most significantly correlated to the member satisfaction implying the importance of the quality of content for this need gratification. However in the first Model we find that online social interaction is negatively related to member satisfaction. This was a little surprising given that community members spend at least an hour each day online. Most communities find it necessary to organise activities for on or offline interaction but it indicates that there is no latent need for this in the knowledge communities. Other results on personal uses and self expression indicate that there is personal gratification when members share information.

Table 3: Results of ANOVA Regression Analysis [a]

Uses	Member Satisfaction with VC	Model 1	Model 2
Functional Uses	Information Need	.49*	.49*
Emotive Uses	Social Interaction	-.03**	-.19*
Emotive Uses	Personal uses	.15*	
Emotive Uses	Self expression uses	.12*	
Contextual Uses	Entertainment	.21*	.18*
	F	47.94*	73.53*
	R^2	.53	.51

[a]Model statistics are standardized betas
*p<00, **p>.05

Conclusions

We set out to investigate the motivating needs that persuade users to become members in a fee based knowledge community. Our objective was to present a perspective on managing virtual community by adapting uses and gratifications theory. Based on our study we identify three key motivators for VC use: Functional, Emotive and Contextual. These represent various mixtures of needs but essentially related to the information acquisition and more for surfing for information for pleasure.

Knowledge communities operate on different principles than other communities of interest. Their focus is not in transaction or social interest thus functional need fulfillment is the major motivation for members to stay in it. This is not surprising given our data unit is based on knowledge generation and is goal specific [40,20]. The content generation by the host rather than members seem to be critical in success of this virtual community. This shows the community model should concentrate on content building.

A successful virtual community will aim to fulfill its member's needs and engage in preemptive actions to create value for host organization, where members will be active users and participants for sustaining success of the virtual community. In knowledge community socialization in virtual environment is not desirable.

However, there are limitations to our approach to identify these motivators. Members are in control and are assumed to be active participants but there are passive participants whose latent needs will need to also be identified. Content which gratifies needs for a variety of users with different perceptions is difficult to generate. Further research can focus on transparency of validation of these needs in a larger sample and wider context of VCs. Issues transpiring subsets of factors will refine our understanding in this field. For instance, and univariate analysis method will develop further transparency of data. Studies which view virtual community as a platform for management of strategic partnership between a host and its members are few, even though success of a virtual community depends on dyadic relationship which aims at member or user satisfaction. This research began this process and our results contribute in understanding what motivates an individual member for participation in a virtual community.

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