

Exploration of Virtual Community Mechanism Model Building

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1. Introduction

The internet revolution has evoked the unprecedented proliferation of virtual communities. Virtual communities document every life in cyberspace, and exchanging information and knowledge inside them rapidly has dramatically changed our lives (Koh and Kim, 2003).

The rise of virtual communities in on-line networks has also set in motion an unprecedented shift in power from vendors of goods and services to the customers who buy them. Vendors who understand this transfer of power and choose to capitalize on it by organizing virtual communities will be richly rewarded with both peerless customers loyalty and impressive economic returns (Hagel and Armstrong, 1997).

Despite a proliferation of virtual communities, virtual community service providers, who offer their websites as the place or for community building and managing, are struggling to find out their own business model. In Korea, up until now, Daum (<http://www.daum.net>) and Naver (<http://www.naver.com>) maintained bragging rights as the nation's leading portals, offering news, shopping, e-mail, games, communities and other fancy features armed with easy-to-navigate interfaces. According to Metrix, Daum was the most-visited portal last month with 24.7 million users logging on and 3 million virtual communities, followed closely by Naver of NHN with 23.6 million, as of June, 2004. Yahoo Korea, the

Table 1 : Portal Community Service Usage in Feb. 2004 (Korea)

Website	Community Service	Visitors (Thousands)	Page View (Thousands)	Days of Visit (day)
Daum	Cafe	19,594	7,009,743	8.8
Naver	Cafe	5,720	219,601	2.2
	BLOG	7,964	99,369	2.1
Nate	Cyworld H.P	7,526	5,097,062	8.1
	Cyworld Club	3,197	539,104	5.4
Empas	BLOG	2,059	81,975	2.3
Sayclub	Say H.P	3,247	496,084	5.8
Freechal	Community	4,240	339,091	5.6

Source: <http://www.metrixcorp.com>

affiliate of U.S.-based giant Yahoo!, placed third with 18.8 million visitors in the monthly survey while Nate of SK Communication, which operates the famous Cyworld, followed with 18.3 million. ‘I love school’, an on-line alumni association support site, attracted 7 million members in 12 months (Jan 2000-Jan 2001) and, as of July 2002, is hosting 1.2 million virtual communities.

Most of the rapidly-growing website are providing the additional functions for the formation of virtual communities such as free homepage, mail service, bulletin board, chatting, instant messenger and blog service. These functions will give customers the ability to interact with each other as well as with the company itself and businesses can build new and deeper relationships with customers. Commercial success in the on-line arena will belong to those who organize virtual communities to meet multiple social and commercial needs. This trend means that not only virtual community itself plays an important strategic role in Internet business but also marketing practitioners begin to evince considerable

interest in this. But relatively little academic research in marketing has examined virtual communities,

This study's purpose is to understand virtual community dynamics. In order to understand virtual community dynamics well, we begin with a brief review of traditional and virtual community and we build virtual community mechanism model. This model explains why and how virtual communities are formed, what activities inside the virtual community are carried out and what are community outcomes in marketing perspectives. With this model building, we try to link needs for virtual community formation, virtual community activity, virtual community outcome and finally virtual community portal's outcome as one set of model, called four stages of virtual community mechanism model building. Taken together, we hope to provide virtual environment marketers with both a rich conceptual understanding and practical insights regarding the allure of virtual communities and their implications.

2. Understanding of Traditional community and Virtual community

Traditional community

Webster's dictionary defines community as "a group of people living together as a smaller social unit within larger one, and having interests, etc. in common".

Among many different definitions on community, core concept is 'interests in common'. A community is mainly characterized by the relational interaction or the social ties that draw people together (Heller, 1989). A community can also be seen as a group where individuals come together based on obligation to one another or as a group whether individuals come together for a shared purpose (Rothaermel and Sugiyama, 2001). Duncan (1959) regarded the community as an ecological complex based on

the interdependence of four components: people, organization, environment, and technology.

While there are many definitions of community, a review of the sociology literature reveals at least three core components or markers of community, as well as the critical notion of imagined community (Anderson 1983). The first and most important element of community is what Gusfield (1978) refers to as consciousness of kind. Consciousness of kind is the intrinsic connection that members feel toward one another, and the collective sense of difference from others not in the community. Consciousness of kind is shared consciousness, a way of thinking about things that is more than shared attitudes or perceived similarity. It is a shared knowing of belonging. The second indicator of community is the presence of shared rituals and traditions. Rituals and traditions perpetuate the community's shared history. Rituals serve to contain the drift of meanings. Traditions are sets of social practices which seek to celebrate and inculcate certain behavioral norms and values. The third marker of community is a sense of moral responsibility, which is a felt sense of duty or obligation to the community as a whole, and to its individual members. This sense of moral responsibility is what produces, in times of threat of the community, collective action.

Virtual community

The development of communication techniques, telecommunication and information techniques changed the traditional community concept. The meaning of community keeps widening because community is no longer bounded in location. The new communication techniques get geographically scattered individuals together, who have a common objective and identity, in a cyberspace.

Definitions of a virtual community have been plenty. Fernback and Thompson (1995) characterized the virtual community as “Social relationships forged in cyberspace through repeated contacts within a specific boundary or place.” Balasubramanian and Mahajan (2001) defined it as any entity that exhibits all of the following characteristics;

- a. an aggregation of people
- b. rational members
- c. interaction in cyberspace without physical collocation
- d. social exchange process
- e. a shared objective, property/identity, or interest between members.

Regarding a virtual community as a class of group computer-mediated communications for being a virtual community: interactivity, communicators, sustained membership, and virtual space. In this definition of a virtual community, we find common keywords such as members, interaction, cyberspace, and shared goals.

From a relationship building perspective, Rheingold (1993) defined the virtual community as “social aggregation that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationship in cyberspace.” Hagel and Armstrong (1997) also defined the virtual community as “the computer mediated space where there is an integration of content and communication with an emphasis on the member-generated content.”

Despite subtle differences in focus, researchers agree on the use of “cyberspace” as essential for the identification of virtual communities. We do not think such view reflects the reality of millions of diverse virtual communities operation in the real world. Some virtual communities exist strictly in cyberspace. But in a number of other virtual

communities, community members engage in off-line as well as on-line interactions (Weinreich, 1997). For example, the members of “Red Devils”, Korean National Football Team Supporters, not only exchange information in cyberspace but also meet each other in off-line places. Rothaermel and Sugiyama (2001) noted that virtual community may not be a complete substitute for personal, simultaneous, one-to-one interaction, either vocally or face to face. In their study, about 30 percent of the respondents communicated with other TimeZone.com members via the telephone and in person, in addition to their online participation within the virtual community. This phenomenon is particularly visible in virtual communities which originated from the off-line context (e.g. star fan clubs, alumni association). Thus, to accommodate a broader range of virtual communities, we define the virtual community as “a group of people with common interest or goal, interacting predominantly in cyberspace.” (Koh and Kim, 2003).

In traditional community, community members are ‘bounded’ and their membership may be imposed involuntarily by chance of birth, proximity of residence, or the happen stance of geographic relocation. Most of traditional communities are community of requirement strongly characterized by solving their necessities.

Traditional community members should demonstrate their values to their communities in order to stay in there.

But in virtual communities, the individual members, membership, involvement, and communication is driven by volitional choice. And also an individual member can terminate his or her membership in the virtual community conveniently and effortlessly—often simply by ending the navigation session and never returning to the virtual community’s domain. Simply put, virtual communities are ‘community of choice’.

Table 2 : Traditional community and Virtual community

	Traditional community	Virtual community
Forming factors	● Consciousness of kind	● Individual interests etc.
Location	● Chance of birth ● Proximity of residence	● Shared values and needs ● No geographical boundaries
Interactivity	● Face to face	● Computer-Mediated Communication
Shared bond	● Strong community sentiment (belongings, shared value and norms)	

Virtual communities try to show their values to their members.

In spite of this seemingly tenuous hold on individual members, there is growing evidence that participation in such virtual communities is immersive and protracted. With the passage of time, the virtual community becomes a central venue for many members, where they seek and appear to find companionship, social support, and a sense of belongingness (Wellman & Gulia,1999).

3. Four stages of Virtual community model building

Based on a review of existing studies, we derived the theoretical framework for understanding the overall virtual community mechanism. The overall theoretical framework for virtual community dynamics is shown in Figure (1).

We expect that needs for virtual community formation affect the virtual community formation. Once the community is formed for satisfying its needs, the community members begin to interact very actively. And that activity can lead to virtual community outcomes and portal's outcome.

1) Needs for Virtual community formation

People are drawn to virtual communities because they provide an engaging environment in which to connect with other people—sometimes only once, but more often in an ongoing series of interactions that create an atmosphere of trust and real insight. But what is the basis of this interaction? It is essentially based on people's desire to meet four basic needs: transaction, interest, fantasy and relationship.

The four sorts of community need are not mutually exclusive. Few will be able to succeed if they address one need to the exclusion of the others. This is because the strength of virtual communities rests in their ability to address multiple needs simultaneously (Hagel and Armstrong, 1997).

When consumers shop for goods and services, they often seek advice from others before they buy, essentially blending the needs met by communities of transaction with those met by communities of interest. Organizers offer participants the greatest range of services when they address all four needs within the same community. In practice, this may not be possible, but community organizers should strive to meet as many of the four needs as they can. By doing so, they will be able to develop new and stronger relations with participants.

(1) Transaction needs

The need to “transact”, broadly defined, is being met on-line through the trading of information between participants. Participants with a strong interest in certain kinds of products and services are gathering to exchange information and experiences regarding purchases. Perhaps community portal's final purpose through cyber community is to establish the profit generating model through commercial transaction or advertisements.

In this respect, Communities of transaction primarily facilitate the buying and selling of products and services and deliver information related to those transactions. They are not communities in the traditional social sense. Participants are encouraged to interact with one another in order to engage in a specific transaction that can be informed by the input of other members of the community. The organizer of a community of transaction does not need to be a vendor. Community organizers may simply bring together a critical mass of buyers and sellers to facilitate certain types of transactions.

In terms of transactions, group shopping and reverse markets are the newly emerging areas in internet marketing. Cyber communities aggregate people who have intention to buy and bargain with producers about the price of the articles. Participants can buy at lower price. The community in fact provides a unique context in which commerce can take place as customers equip themselves with better information. The result is a reverse market in which power accrues to the customer. For example, a customer ordered a very special Chrysler minivan. But Chrysler could not manufacture it for only one customer and the order was cancelled. However, that customer posted on the cyber message board the minivan specifications. A little later, he aggregated 17 people who had the same interests. Chrysler then provided the minivans with 20% discounted price. This is a new possibility of group buying or reverse market.

(2) Interest needs

Most of us have some passionate interest. Many virtual communities targeted the interest need by aggregating a dispersed group of people who share interest and expertise in a specific topic. Interest needs bring together participants who interact extensively with one another on spe-

cific topics such as music, tour, debate on political issues and stock market etc. Up until now, many virtual communities were created for these interests. Participants think it very valuable in that they meet on line and share the very specified information.

These interest motives involve a higher degree of interpersonal communication than do transaction motives. One of the most successful communities based on people's interest is 'GardenWeb' and the other is Motley Fool. The GardenWeb Forums comprise the largest community of gardeners on the Internet. Covering more than 90 different plants, regions and topics, the forums allow members to tap the collective wisdom of the thousands of other users who visit GardenWeb each day. Members can post queries on plant care, how to deal with a landscaping problem or perhaps initiate a discussion on your favorite subject (<http://www.gardenweb.com>). The Motley Fool is an electronic forum that two charismatic brothers, David and Tom Gardner, host on America Online. The Gardners began the Motley Fool for people interested in personal financial investment. They developed a portfolio of stock investment and invited people to comment on the choices made. The Motley Fool has become an engaging blend of information and entertainment. The Motley Fool has also aggressively leveraged user-generated content. Because the number of users and the extent of their participation have grown, the Motley Fool now offers extensive message boards organized by company, industry, and investment strategy.

(3) Fantasy needs

People on-line today has a strong desires on the imaginary experiences, where they create new environments, personalities, or stories. On American Online, a participant can pretend to be a medieval baron at the Red Dragon Inn. In this fantasy area, visitors exercise their imagination and

participate in the creation of an ongoing story of life at the inn (Hagel and Armstrong, 1996). On ESPNNet, an Internet based sports community, participants can indulge their need for fantasy by creating their own sports team created by other participants. Winners are determined based on the performance of the real players during the season. Participant's real identities are not important in many of these communities, but interaction with others is at the heart of the appeal.

People quench their thirst for fantasy with movies and TV, which provides vicarious satisfaction. People could not affect them but could only accepted the one-way contents.

But with development of internet technology, people have the opportunity to come together and create network environments, new personas and stories. And they can engage in role-playing games where everything seems possible. That is the background of what brings fantasy communities to us.

(4) Relationship needs

At various stages in life, we encounter new, often intense, experiences that may draw us to others who've had a similar experience. Sometimes some experiences are so intense that we cannot forget easily and we cannot cope with them alone. At this time, people may feel a need to come together in communities of relationship around certain life experiences that often are very intense and can lead to the formation of deep personal connections. Virtual communities give people with similar experience the opportunity to come together—freed from the constraints of time and space—and form meaningful personal relationships.

The cancer forum on CompuServe, for instance, provides support for cancer patients and their families. Participants talk about how they deal with the disease and exchange information on medical research, pain

medication, test results, and protocols. The forum's library features literature on cancer, which participants can download. However, the primary value of this sort of community is that it gives people the chance to come together and share personal experiences. In Korea, 'I love school' (<http://www.iloveschool.co.kr>), a typical community of relationship for an online alumni association, is rapidly growing.

2) Virtual community activity

Virtual community activities are composed of three factors: social factors, contents factors and system factors. Social factors involve the community leader's behavior and off-line activities, while contents factors refer to the usefulness and user's enjoyment of community materials. System factors include IT service quality and multimedia support.

Social factors

Leader's enthusiasm

Typical virtual communities are maintained by the enthusiasm and energy of one or more community leaders. The task is to formalize and motivate this grassroots leadership.(Archrol and Kotler, 1999). As in the traditional community, a leader's enthusiasm is believed to help members feel that the virtual community is activated and to foster their care and attention to the virtual community (Kim, 2000). Figallo (1998) argued that a leader's involvement is essential to the building of relationship and user created content, regardless of whether the leader is officially designated and titled by the provider of the site or the leader is the self-proclaimed proprietor of a community. Generally speaking, leader's roles are as follows. Hosts (Sysop: system operators) manage member-generated content, which includes bulletin boards, chat, and real-time on-line events. Archivist, whose job is to build up the library of member-

generated content, is another role. The archivist decides what to weed out and what to keep. Community editor, customer service manager, information system manager, community developer and community architect are other typical roles of leader.

Hesselbein (1998) proposed that a handful of leaders, with a vision of what their community could be, can stimulate their virtual community. To be a successful community leader, he or she should communicate a shared vision, ensure that members feel valued, and create a personally enriching experience (Goldsmith, 1998).

In the initial community building stage, survival of virtual communities often depends on the leaders' effort such as visioning, caring members, and devoting themselves to their virtual community. One passionate leader can transform its members to be highly committed to the community activities.

Off-line activity

Off-line meetings can play a role in complementing the low social presence inherent of most computer-mediated environments (Lombard and Ditton, 1997). Kiesler et al. (1984) argued that balancing on-line with off-line activities is critical in sustaining a virtual community, implying that use of diverse communication channels may be effective in the computer-mediated environment. Just as community ties that begin in person can be sustained through the online interaction, online ties can be reinforced and broadened through face-to-face meetings (Wellman and Gulia, 1999). Weinreich (1997) also insisted that on-line communication is not simple enough to establish meaningful relationship among individuals. His survey with on-line users showed that 62% of the respondents reported they had met other users in person.

(2) Contents factors

Enjoyability (playfulness)

Enjoyability is a useful construct for understanding individuals' evaluation and affection of virtual communities. Enjoyability of a virtual community refers to enjoyment or playfulness from the community's contents and interactions with other members. Previous research has revealed that attitudinal outcomes such as emotion, pleasure, and satisfaction result from the playfulness experience. Moon and Kim (2001) found that playfulness is a critical factor that reflects the user's intrinsic beliefs in the World Wide Web acceptance. Playfulness or enjoyability is also known to affect flow-immersion by human-machine interaction (Griffiths, 1998).

Also enjoyability is believed to let members perceive belongingness to their virtual community because members whose hedonic needs are met by interactions with other members or the community contents are likely to develop stronger loyalty toward their community. A community that is functionally "not fit" gives a strong message that the inhabitant of the community is of low worth, and it cannot lead him or her to a sense of belonging to the community (Hubiak and Banning, 1994).

Usefulness

An important element of the community is the on-going addition of new content that members perceive as valuable or useful (Hagel and Armstrong, 1997). Such content helps retain current members and attract newcomers (Rothaermel and Sugiyama, 2001). Newcomers, in turn, help to stimulate the community by bringing fresh ideas and perspectives. However, usefulness is based on the motivation theory which argues that if an individual perceives an activity to be instrumental for achieving valued outcomes, he/she will be more likely to accept the new technology.

It has been pointed out that usefulness appears to exhibit a stronger and more consistent relationship with usage behavior than other variables such as satisfaction or preference (Davis, 1989). Also, we often find that useful contents and materials help develop the trust among community members and fuel their active posting and viewing behaviors in communities.

System quality

Sufficient understanding not only on the technical sides but also on social and cultural issues is needed for building a successful cyber community. Nevertheless, community solutions, the technical tool for raising communications among members, cannot be disregarded. Various kinds of technical tools determine community system quality. Choice of communication technical tools depends on the characteristics of community.

Many communication alternatives are there such as one-to-one, one-to-many, many-to-many, and simple friendship accommodation. General tools for communication is as follows ; email, Email newsletters, mailing list, online conference & Bulletin Board, chat, instant messaging and internet broadcasts

If the quality of information system provided by a virtual community provider does not meet the user's need, it will turn into a major impediment to facilitating virtual community activity. There are several sub-dimensions of information system quality, which can be applicable to the virtual community context. For example, satisfactory response time should be a necessary condition for any virtual communities (Stein, 1995). Fast or poor response time or system reliability would affect how community members access and use the community site, and may change their web activities.

3) Virtual community outcome

Virtual community activity determines virtual community outcomes. Speaking concretely, the more impressive and successful community activities are the more people participate in the virtual community activities and the virtual community will be promoted more broadly. Developing this positive circulation may be meaningful for marketing perspectives. Virtual community activities, participation and promotion can generate virtual community outcome, which is values in marketing perspective.

4) The Sense of virtual community

The need for virtual community forms a virtual community. Participants in the virtual community begin to keep sense of virtual community as results of various virtual community activities. Sense of community concept is similar to organizational citizenship behavior. Without this sense of virtual community, the virtual community would be hard to exist and will be disappeared soon. The sense of community is a critical factor in allowing the virtual community to exist for an extended period of time.

Heller defined the sense of community as “the feeling of the relationship an individual holds for his or her community”(Heller et al., 1984) or “the personal knowledge that one has about belonging to a collective of others” (McMillan and Chavis, 1986). We can define the sense of virtual community as the individual’s attitude toward their virtual community reflected in their feelings of membership, cognition of influence, and immersive behavior. The dimensions of membership, influence and immersive behavior respectively the affective, cognitive and behaviors aspects of virtual community members, just like the general “attitude” construct in the areas of marketing (Assael, 1995). Membership indicates

that people experience feelings of belonging to their community. Membership can be described as a positive bond that develops between groups or individuals and their environment. Influence implies that people feel they can make a difference in their community. Influence seems to be closely related to the identification concept. Identification is an intrinsic connection toward other members, and a collective sense of separation from nonmembers (Wellman & Gulia, 1999). Such group affiliation not only colors the individual's opinions, ideas, and positions on specific issues, but also provides the impetus to return to the community in the future.

Immersive behavior is an expanded concept of flow (Hoffman and Novak, 1996). Virtual community characteristics such as anonymity, addictive behaviors and voluntary behaviors (Young, 1996; Kiesler et al., 1985) imply the state of immersion, or flow experience. Flow is the term used to describe the "holistic sensation that people feel when they act with total involvement"(Csikszentimihalyi, 1975). The concept of flow is expected to be relevant in the virtual community context because many virtual community members, unlike the traditional community members, display totally immersive (or addictive) behaviors toward their community.

5) Virtual community provider outcome: Loyalty dynamic loop

Certain positive characteristics of a virtual community may contribute to its activity and such activation may affect to the formation of positive sense of virtual community. This positive sense of virtual community will generate loyalty toward the virtual community provider. The more a community member has a sense of virtual community, the more loyal to the community members they are likely to become, the more likely they

are to participate in community forums, and less likely they are to leave the community. More loyalty generates more usage, more participation in community fora, and more personal relationships between members.

This in turn generates more loyalty. So the self-reinforcing nature of the loop is evident. Speaking more concretely, we can measure the level of loyalty with accumulated number of members, the number of visitors a day, frequent visitors ratio, contributor's ratio, professionals' ratio who can affect the general members, switching ratio of customers and purchasing price per unit.

As with most products and services, the first challenge is to interest people in trying out community. Once people do join the community, the next challenge is to get them to increase their participation. Ideally, they should visit often and spend a lot of time on each visit. As members increase their participation, the community organizer will want to build loyalty to their portal site and make sure they stay. And finally community portals can capture value from members with the form of advertising revenues, transaction commissions, or fees paid directly by the members.

For example, Sayclub.com reported a profit because of the "avatar" service model recently. Sales of Sayclub.com during 2001 were reported to be composed of three items: Avatar selling (70%), advertisements (5%), and miscellaneous (25%). The community service providers (portals) seem to believe that when the virtual communities inside their sites are stimulated, the sales volume of the providers will be increased. For example, community members who enroll in an activated community tend to purchase avatars to present themselves to other members, or to make up the avatar themselves in their own style, since they have the need to be perceived as stylish or impressive persons in their community. Thus, the sales volume of avatar may remarkably increase when virtual com-

munity members interact with each other actively, even after membership numbers stabilize, which suggest that virtual community activity may affect the service provider's profit.

4. Discussion: The marketing value of virtual communities

Despite of the simple and immature theoretical model building of virtual community, this model can provide the conceptual framework for marketers who try to benefit from virtual communities. Through this model building, we try to understand the dynamics of virtual community: from the formation to the loyalty to portal site.

For marketers, the important issues of virtual community is what draws people to and holds people on a website, a concept known as stickiness, so that they will buy goods or services or view more advertisements.

These issues are directly related with a new dimension of the profit return model building. Directly speaking to a sense of business, very simple principles can be found. Virtual community can provide benefits to both customers and vendors/portal sites. In order to attain mutual benefits, first things to do for members and virtual community are to generate traffic, meaning getting target people to travel to the site. Next steps is to have people concentrate traffic, meaning getting them to spend increasing time in the community. Final steps is to lock in traffic, meaning creating switching barriers that make it increasingly difficult for members to want to leave the community once they've joined. This dynamic loop will produce loyalty to the community portal.

The successes of America Online (AOL) and Daum Communications have proved that virtual community inside of portals can be a big business.

E-commerce entrepreneurs anticipate that virtual communities not only will keep people at their sites, but will also play an important role in marketing, as people tell each other about their purchases and discuss banner advertisements. The top managers of community portals are now planning a change in strategy from a focus on increasing the number of users to increasing user loyalty toward their site. However, they are still wondering whether virtual community stimulation is related to loyalty toward the community service portal and where it, in the end, results in profit for the portal. Positive or optimistic answers would trigger more investment in the community portals involving community services.

Understanding virtual community dynamics can help to provide marketing practitioners specific ways of managing virtual communities and finally lead to realizing potentials of community value in marketing.

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