

Promoting the Early-Adopter Feedback Process Using a Firm-Initiated Online Community

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Abstract--There are many online communities in Korea. An online community is a group of people that primarily interact via the Internet rather than face-to-face. Many firms are using online communities for communicating with users. The research question we attempt to answer is how online communities can be utilized throughout the NPD process, especially by using an early adopter feedback system. We investigate three leading MP3 player manufacturers in Korea. The number of people in these communities is over 100,000. They use various methods of promoting communication with users.

This community can help retrieve valuable insight on customer needs, effective characteristics for new products, and trends for future development. These communities can also provide an effective method of communicating with early adopters. Using an online community is the most effective and efficient way of hearing customers' voices, thereby elucidating the strong and weak points of new products. In addition, communication activities could instill brand loyalty between firm and customers.

Making an online community more active is the main challenge of firms that intend to use one. High-quality products, an effective strategy for attracting early adopters, and top management support for online communities are factors that determine the success of growing online communities. We also suggest a theoretical framework for online community development and an early-adopter feedback facilitation process.

I. INTRODUCTION

The Internet is changing many parts of our lives. As an efficient tool for communication, the Internet can transcend temporal and geographical barriers and make it easier to access company information. In the past, user involvement in a firm's new product development (NPD) process was limited to feedback on launched products, such as complaints and new idea suggestions. Recent studies identify the possibility of enhancing the performance of new products by utilizing users' involvement in the NPD process through the Internet [2][10][11][12], but these measures still remain conceptual.

In reality, the emergence of the Internet has had a greater impact on user interface with the firms than on intra-firm activities. The relationship between firms and customers has become dynamic and strong by the emergence of online brand communities (OBCs). The building and operating of OBCs can be an important method in strengthening customer relations [7][9].

The role of an online community is not confined to maintaining customer relations. In many cases, online

communities can be sources of innovation [6][15]. Existing studies on OBCs from the innovation perspective focus on the software industry. However, we need to expand the research scope to consumer products.

An online community is a group of people that primarily interact via the Internet rather than face-to-face. Many firms are using online communities for communicating with users in Korea. The number of people in these communities is over 100,000. They use various methods of promoting communication with users. Korea is one of the best places to study OBCs because of the high prevalence of Internet use in this country.

The research question of this study is how on-line communities are utilized throughout the NPD process, especially by using early adopter feedbacks. We investigate three leading MP3 player manufacturers in Korea.

II. LITERATURE REVIEW

A. New Product Development

Many researchers have classified the NPD process into several stages. Krishnan and Ulrich [8] have reviewed the literature of product development decisions and grouped these decisions into four categories: concept development, supply-chain design, product design, and production ramp-up and launch.

There are many descriptions and process models for NPD processes. We categorized NPD processes into three stages: 1) opportunity exploration/idea generation; 2) product development/test; and 3) product launch/after service. The existing literature views the commercialization stage as the final stage, but in this study, activities after commercialization are considered important as well.

Studies on success/failure factors of NPD process can be viewed from three perspectives [1]: the rational plan perspective, the communication web perspective, and the disciplined problem solving perspective. These perspectives can be further divided into key ideas, theories, methods, products, markets, senior management, project team, communication, organization of work, project leaders, customers, suppliers, and performance. The rational plan perspective emphasizes the role of careful planning for attractive marketing and the successful execution of the plan with strong senior management support. The communication web perspective narrowly focuses on one independent variable, namely communication. Communication among project team members and with outsiders stimulates the

performance of development teams. The disciplined problem-solving perspective regards successful product development as a balancing act between relatively autonomous problem solving by a project team and the discipline of a heavyweight team leader, strong top management, and an overarching product vision.

To investigate the role of brand community and feedback process between a firm and users, we view the development of new products from the communication web perspective [1].

B. Brand Community

The concept of a brand community was introduced by Muniz and O’Guinn [10]. The authors defined a brand community as “a specialized, non-geographically bound community, based on a structured set of social relationships among admirers of a brand.” According to their definition, a brand community is a set of individuals who voluntarily relate to each other because of their interest in some brand or product. Furthermore, they explain that a brand community is characterized by three core components: 1) consciousness of kind; 2) rituals and traditions; and 3) sense of moral responsibility.

In contrast, Rheingold [13] explains a virtual community as “social aggregations that emerge from the Internet when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace.” Fernback and Thompson [15] define a virtual community as “social relationships forged in cyberspace through repeated contact within a specified boundary or place (e.g., a conference or chat line) that is symbolically delineated by a topic of interest.”

Based on the existing literature, this paper defines an on-line community as “a set of socially gathered people having a common interest or purpose who actively interact, create, and share values.”

III. CURRENT STATUS OF ON-LINE BRAND COMMUNITIES IN KOREA

Even though there are abundant online communities in Korea, this study focuses on a brand community. A brand

community consists of people who are interested in a specific product, or brand and exchange their ideas in a bounded community.

There are two types of online brand communities: user-initiated brand communities and firm-initiated brand communities. User-initiated brand communities are made up of the people who voluntarily participate in their own virtual place. People share information, knowledge, usage tips, and discuss or transact used products of their own volition. Communities usually start at a portal site that provides easy use of online communities such as Naver (www.naver.com), Daum (www.daum.net), or Cyworld (www.cyworld.com).

Firm-initiated brand communities are used as marketing media for users. Some firms start their brand communities on a portal site, but other firms start their own independent online communities. For example, after Givenchy successfully launched and used the brand community for perfume promotion at Cyworld, many other brands initiated brand communities at independent websites.

IV. RESEARCH FRAMEWORK AND METHODS

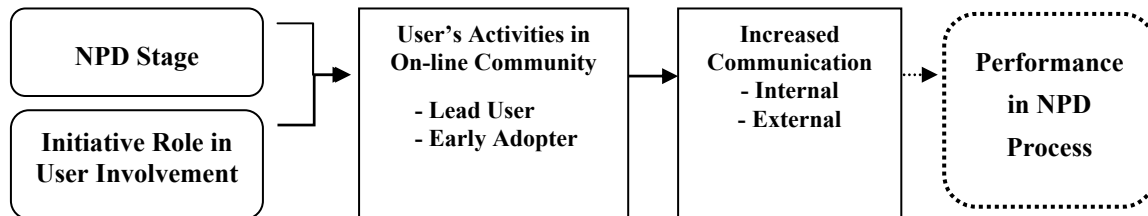
A. Research Framework

This study focuses on user involvement in the NPD process through the Internet. The research questions of this study can be summarized as follows:

- 1) What are the activities of users in a firm’s NPD processes?
- 2) How can online brand communities be utilized throughout the NPD process, especially by using early adopter feedbacks?

We investigate three leading MP3 player manufacturers in Korea. The research model is simple and comprehensive, as shown in **Figure 1**.

The framework to be used in analyzing the company cases is presented in **Table 1**. We will analyze several methods utilized by the firms to promote internal and external communications along the NPD stages.



<Figure 1> Research Model

<TABLE 1> RESEARCH FRAMEWORK FOR ANALYSIS.

NPD Stage	User Roles	Methods of User Participation	
		Firm-Initiated	User-Initiated
Idea Generation	Lead User	-	<ul style="list-style-type: none"> ● Communicating with individual innovative user ● Activating brand community
Product Design and Development	Lead User (User as Innovator)	<ul style="list-style-type: none"> ● Facilitating lead user groups 	-
Marketing Launching and Profit Management	Early Adopter	<ul style="list-style-type: none"> ● Managing a panel of early adopters 	<ul style="list-style-type: none"> ● Utilizing brand community

Depending on the stages of NPD, new roles for users can vary, as can the methods of user participation [3][14]. The roles of lead users are important before market launch, while early adopter feedback is critical after market launch.

B. Research Method

To study the role of online communities in NPD, we selected the MP3 player industry. A case study on three MP3 player manufacturers is carried out. Firms A and B are high-tech venture firms, and Firm C is a large company.

MP3 (MPEG-1 Audio Layer 3) is a digital audio encoding format using a form of lossy data compression. It is a common audio format for consumer audio storage, as well as a de facto standard encoding for the transfer and playback of music on digital audio players.

A case study is a method applicable when little is known about a phenomenon. It seeks to develop a theory not by explaining a phenomenon with existing concepts, but by discovering new concepts and variables through studying individual cases [4].

V. RESULTS: CASE ANALYSIS AND FINDINGS

Selected companies for the case study are leading companies that have run online brand communities successfully. **Table 2** summarizes basic information about the three companies. **Tables 3, 4, and 5** explain the situations and activities of online brand communities in the NPD processes for each firm. Even though the degree of user participation show little difference, but main activities for three firms to facilitate communication between users and the firm and to use online community more effectively are alike among them.

We summarize main activities in **Table 6**. Main activities are i) Analyzing market needs (voice of customers), ii) Identifying new ideas for products, iii) Accessory development and testing, iv) Test market before line production or beta test prototype sample, v) Gathering product reviews by supplying free new products, vi) Customer complaints and requirements assessment, and vii) Problem identification and upgrade product.

<TABLE 2> CASE OVERVIEW: ON-LINE COMMUNITY SUMMARY.

	Firm A	Firm B	Firm C
Year Started	2001	2001	2002
Functions	<ul style="list-style-type: none"> • Product promotion • Dealing with customer complaints • Information/News • Entertainment • Online Interaction 	<ul style="list-style-type: none"> • Product promotion • Dealing with customer complaints • Information/News • Entertainment • Online Interaction 	<ul style="list-style-type: none"> • Product promotion • Dealing with customer complaints • Information/News • Online Interaction
Visitors Per Day	41,025	41,868	26,493
Session Visits Per Day	55824	54187	31827
Session Visit Rank (As of 2/Jan/2008) ¹	414th	475th	754th

¹ <http://www.rankey.com/>

<TABLE 3> THE CASE OF FIRM A: USER ACTIVITIES ALONG THE STAGES OF NPD PROCESS

NPD Stage	Firm's Arrangements and User Activities in NPD	Evaluation for Firm's Actions and User's Activities
Idea Generation	<ul style="list-style-type: none"> ● Identifying ideas for existing products ● Analyzing ideas(Counting frequencies for ideas) and applying these ideas to the product ● Analyzing existing user reviews and comments ● Identifying market needs(voice of customers) 	<ul style="list-style-type: none"> ● Can hear the real voices of customers but most of them are in vain because users expect technically or economically unfeasible product
Product Design and Development	<ul style="list-style-type: none"> ● Accessory development and testing ● Test market before line production(2 or 3 weeks earlier than product launching) using Supporters(people who are royal to the firm) 	<ul style="list-style-type: none"> ● Easy to find and identify the royal people to the firm
Marketing Launching and Profit Management	<ul style="list-style-type: none"> ● Gathering product review by supplying free new product ● Customer complaints and requirements assessment ● Problem identification ● Q&A and upgrade product 	<ul style="list-style-type: none"> ● Quality review can provide the advantages of the product to many users ● Quality problem can affect sales negatively for a long time ● Supporters may control negative reactions and create word-of-mouth effect ● Can affect customer satisfaction

<TABLE 4> THE CASE OF FIRM B: USER ACTIVITIES ALONG THE STAGES OF NPD PROCESS

NPD Stage	Firm's Arrangements and User Activities in NPD	Evaluation for Firm's Actions and User's Activities
Idea Generation	<ul style="list-style-type: none"> ● Identifying ideas for existing products ● Monitoring customer characteristics, need, and trends ● Identifying market needs(voice of customers) 	<ul style="list-style-type: none"> ● Can hear the real voices of customers ● Many of them are in vain because users expect technically or economically unfeasible product
Product Design and Development	<ul style="list-style-type: none"> ● Beta test prototype sample to the Masters(people who are royal to the firm) in 1 or 2 month before product launching ● Feedback ideas from Masters(Solving HW and SW problems) 	<ul style="list-style-type: none"> ● Easy to find and identify the royal people to the firm
Marketing Launching and Profit Management	<ul style="list-style-type: none"> ● Gathering product review by supplying free new product to the professional reviewer ● Customer complaints and requirements assessment ● Problem identification ● Q&A and upgrade product 	<ul style="list-style-type: none"> ● Communication with users in one place ● Can affect customer satisfaction

<TABLE 5> THE CASE OF FIRM C: USER ACTIVITIES ALONG THE STAGES OF NPD PROCESS

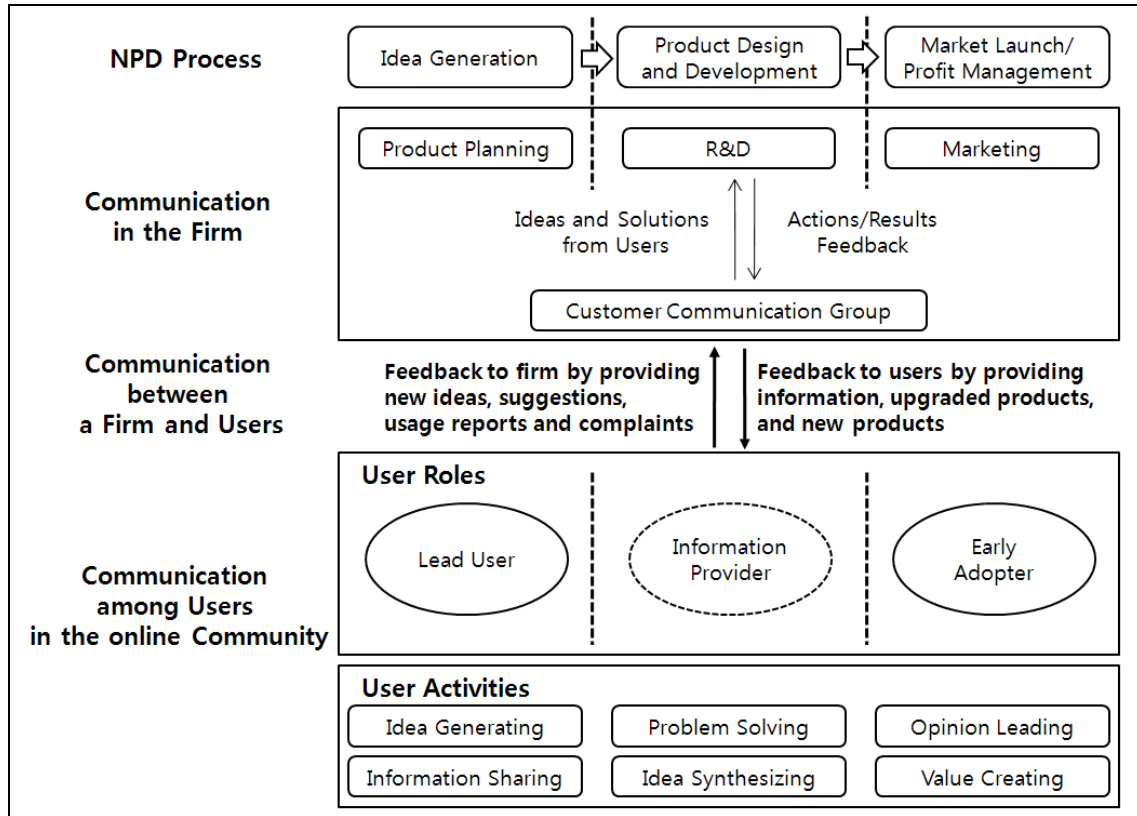
NPD Stage	Firm's Arrangements and User Activities in NPD	Evaluation for Firm's Actions and User's Activities
Idea Generation	<ul style="list-style-type: none"> ● Identifying ideas for existing products ● Monitoring customer characteristics, need, and trends ● Identifying market needs(voice of customers) 	<ul style="list-style-type: none"> ● Can hear the real voices of customers ● Many of them are in vain because users expect technically or economically unfeasible product
Product Design and Development	(No activities)	
Marketing Launching and Profit Management	<ul style="list-style-type: none"> ● Gathering product review by supplying free new product to the professional reviewer ● Customer complaints and requirements assessment ● Problem identification 	<ul style="list-style-type: none"> ● Communication with users in one place

<TABLE 6> USER ACTIVITIES IN THE STAGES OF THE NPD PROCESS: SUMMARY

NPD Stage	Firm's Arrangements and User Activities in NPD
Idea Generation	<ul style="list-style-type: none"> ● Analyzing market needs (voice of customers) ● Identifying new ideas for products
Product Design and Development	<ul style="list-style-type: none"> ● Accessory development and testing ● Test market before line production or beta test prototype sample
Marketing Launching and Profit Management	<ul style="list-style-type: none"> ● Gathering product reviews by supplying free new products ● Customer complaints and requirements assessment ● Problem identification and upgrade product

Figure 2 explains three patterns of communication in and with online communities. The *first* and usual pattern is the communication between a firm and users. In this external communication with users, users can provide new ideas, suggestions, usage reports, and complaints. The *second* pattern of communication occurs with the firm through the customer communication group. Through the intra-firm communication, Product planning, R&D, and marketing departments receive ideas and solutions from users through

the firm's customer communication group, and commit actions and provide results feedback to the customer communication group. Then a firm can provide information, upgraded products and new products to users. The *third* pattern is communication among users in the online community. It also happens frequently. Using these feedback processes, a firm can gain much value from users through online communities. It is notable that the dominant roles and activities of users can vary along the NPD stages.



<Figure 2> Customer Feedback Process between a Firm and Users

VI. CONCLUSION

A. Summary

This study analyzes the activities of proactive users and online brand communities during new product development. The results show that an online community can help provide valuable insight into customer needs, effective characteristics for new products, and trends for future development. These communities can provide an effective method for communicating with early adopters. Moreover, using an online community is the most effective and efficient way of hearing customers' voices and the strong and weak points of new products from the customers' perspective.

Communication activities could build brand loyalty between firms and customers. **Table 7** shows a summary of user roles and activities in the stages of new product development.

Making an online community more active is the main challenge of a firm that intends to use one. High-quality products, firm strategy for attracting early adopters, and top management support for online community are factors that determine the success of growing online communities. We also suggest a theoretical framework for the development of an online community and the early-adopter feedback facilitation process.

<TABLE 7> STRATEGIES TO ENHANCE USER INVOLVEMENT IN THE NPD PROCESS THROUGH AN ONLINE COMMUNITY

NPD Stage	Strategies to Promote User Participation in NPD	
	Firm-Initiated	User-Initiated
Idea Generation	<ul style="list-style-type: none"> ● Build outside idea generating group (IGG) composed of proactive users. 	<ul style="list-style-type: none"> ● Analyze the information and ideas appearing in the online brand community. ● Solicit ideas from users by providing incentives and a supportive atmosphere through the Internet. ● Visit or meet users regularly. ● Activate an online brand community.
Product Design and Development	<ul style="list-style-type: none"> ● Stimulate lead user groups by providing prototypes and samples. ● Adopt an open innovation system. 	<ul style="list-style-type: none"> ● Facilitate the lead user groups (LUG) by providing information on new products and incentives.
Marketing Launching and Profit Management	<ul style="list-style-type: none"> ● Build and manage a panel of early adopters (PEA). 	<ul style="list-style-type: none"> ● Utilize information from an online brand community in the NPD process.

B. Managerial Implications and Further Research

This study has some managerial implications. First, this study analyzes user involvement through an online business community (OBC) in the NPD process. OBC in the existing studies played the role of idea generator and feedback provider. This study shows that the concept of users-as-innovators can be easily implemented with the emergence of OBCs. Second, this study identifies the patterns of user involvement and communication in the NPD stages and suggests some practical guidelines. The cases show vividly how OBC can be a useful method for utilizing the Internet in the NPD process.

We need to conduct further research to identify the influential factors in promoting an OBC’s activities. Also, the benefits and performance of an OBC should be studied, including the impacts of an OBC on internal/external communications. Empirical study with large samples is also needed.

An online community can be a valuable source of obtaining ideas. In particular, opinion leaders, such as lead users and early adopters, can assume important roles throughout the process. A customer-oriented mindset and top management support are even more important in an online society than in off-line settings.

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