Introducing a Relationship Marketing perspective in the measurement of Online Community success

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Abstract
A relationship marketing perspective is missed in measuring the success of online communities. Scope of this paper is to introduce a relationship marketing perspective in the definition of Key Performance Indicators (KPIs) for measuring the success of online communities. Online communities could be a marketing tool for strengthening customer relationships.

Introduction
The rapid growth of online communities on the Internet and accompanying investments by companies (Fernback, 1999) raises questions of how to measure the success of an online community (Iriberri and Leroy, 2009).

According to Figallo (1998), success for online communities can be defined as the substantial benefits to its members through member-generated content and opportunities for growth, as well as expansion of the community through participation and socialization (Figallo, 1998). In the literature, online community success has been measured by referring to two research streams: the technology acceptance literature (Lin, 2006, 2008; Teo and al, 2003) and the Web site quality literature (Lin and Lee, 2006; Yoo and al, 2002).

The technology acceptance literature takes a broader perspective on the user, while the web site quality literature is more focused on the attributes and functionalities of the system itself.

However, a relationship marketing perspective is missed in measuring the success of online communities. Scope of this paper is to introduce a relationship marketing perspective in the definition of Key Performance Indicators (KPIs) for measuring the success of online communities.

In today’s competitive environments, nurturing customer relationships is considered a fundamental element in a winning relationship marketing strategy. As effective relationship marketing tools, online communities are today a means of developing customer relationships (Flanagin and Metzer, 2001) and strengthening the different phases of a relationship with customers, i.e. initiation, growth and retention.

Traditionally, online communities can be considered as a form of Internet based information system (Watcher et al 2000; Hsiu-Fen Lin and Gwo-Guang Lee, 2006) and their success measured by applying the well-known DeLone & McLean Information System (IS) success model (DeLone & McLean, 1992, 2003). The DeLone and McLean IS success model
identifies three different dimensions of IS quality, i.e. information quality, system quality and service quality.

According to the above premises, this paper presents a scorecard of KPIs for measuring the success of online communities classified according to two different dimensions: the IS quality dimension (specified in system quality, information quality and service quality, according to the DeLone and McLean IS success model) and the customer relationship dimension (specified in initiation, growth and retention, according to the phases of the customer lifecycle).

In this way, we suggest companies using online communities as a relationship marketing tool how the levers of IS quality can impact the stages of a customer relationship.

KPIs are taken from an in-depth analysis of the literature and classified according to the proposed framework.

More precisely, our research adds to the marketing discipline in two different ways: first of all, it is the first work that develops a scorecard of KPIs for measuring online community success by integrating both the theory of relationship marketing and Information Systems. Under this perspective, our article will extend and complement the analysis that has been done so far of online communities. Second, this paper clearly defines the meaning of system quality, information quality and service quality for online communities.

The remainder of the article is organized as follows: in the first part, we illustrate the conceptual background by presenting element of the relationship marketing and information system disciplines applied to online communities. In the second part, we will present an in depth literature review of the most common KPIs that have been used in an online community setting. In the third part, we will present our scorecard of KPIs classified according to the suggested dimensions.

Conceptually, our paper relies on the IS and relationship marketing literature. In fact, on one side, online communities can be assimilates to Information Systems. On the other side, online communities can be effective tools for building customer relationships. In the following sections we will explain how we draw on IS and marketing literature to develop our scorecard of KPIs for measuring online community success.

1. **Online communities as Information Systems: system quality, information quality and service quality**

Online communities can be considered as a form of Internet based information system (Watcher et al 2000). In fact, an information system is any integrated set of components for collecting, storing, processing, and communicating information (from Encyclopedia Britannica).

In the literature, the DeLone and McLean Information System success model has been widely applied to define and measure the success of an IS since its publication in 1992. The DeLone & McLean IS Success Model, though published in 1992, was based on theoretical and empirical IS research conducted by a number of researchers in the 1970s and 1980s (DeLone and McLean, 2003).

Based on the previous communication research of Shannon and Weaver (1949) and on the information ‘influence’ theory of Mason (1978), as well as empirical management information systems (MIS) research studies from 1981-87, DeLone and McLean have postulated a comprehensive, multidimensional success model of IS. In its original formulation, the multidimensional success model measures the technical success, the semantic success, and the effectiveness of an information system.

Technical success is defined as ‘system quality’ and measures the efficacy of the information system that produces information.
The semantic success measures the success of the information in conveying the intended message and it is defined as ‘information quality’. Effectiveness success is the effect of the information on the receiver (DeLone and McLean, 2003) and it can variably be expressed by measures of information system use, user satisfaction, individual impact and organizational impact.

As DeLone and McLean (2003, 2004) point out, this combination of success measures has stimulated some critics that have lead to a number of reformulations. Several articles have been published that challenge or extend the model itself. This is for instance the case of Pitt et al. (1995) who stress the need for a service quality measure to be part of IS success (Kettinger and Lee, 1995; Li, 1997).

The stream of research arguing that service quality be added to the IS success model have applied and tested the SERVQUAL measurement instrument from marketing (Parasuraman et al 1988; Pitt et al 1997; Kettinger and Lee 1995) to an IS context. Some SERVQUAL items measure for instance dependability and reliability, assurance and empathy. Some sample SERVQUAL instrument items include ‘IS is dependable’ or ‘the IS has users’ best interest at heart’ and ‘IS employees give prompt service to users’.

As a consequence, DeLone and McLean (2003) suggest that service quality deserves to be added to ‘system quality’ and ‘information quality’ as components of IS success model as independent variable.

In the DeLone and McLean’s (1992) taxonomy, system quality defines technical success, such as easiness of use, navigability, systems usage characteristics and intrinsic systems quality (Chang and Ping 2005). In our conceptualization for online communities, system quality represents the easiness of use and navigability of the system.

Information quality typically describes information effectiveness such as intrinsic quality information, reliability of information, presentational quality of information, flexibility of information and usefulness of information as well as the effects of the information on the user’s job (Chang and Ping, 2005). In our online community setting, information quality represents the quality of the information shared with and coming from the other members of the community.

In the IS literature, service quality traditionally describes the support received from the provider of the information system (DeLone and McLean, 2004), the IS training (Chang and Ping 2005), the responsiveness of the service, the intrinsic and interpersonal quality of service provider (Chang and Ping 2005).

The marketing literature clearly postulates that service quality evaluations include also the manner in which the service is delivered (Parasuraman et al 1985). In online community settings, the information provided can represent the outcome of the service. As de Valck et al (2007) clearly point out, user satisfaction in an online community environment greatly depends on the quality of the interactions with the other members of the community. Members are directly involved in the process of service delivery.

Building on Lehtinen and Lehtinen's (1982) general consideration that in a company service quality is produced in the interaction between a customer and elements in the service organization, we thus argue that the interactions with the other members of the community are determinant in defying the service quality for an online community. This consideration is further supported by Lehtinen and Lehtinen’s (1982) definition of interactive quality as one of the three parts of service quality; interactive quality is derived from the interaction between company’s personnel and customers as well as between customers and other customers (Lehtinen and Lehtinen's 1982).

We thus conceptualize service quality for an online community as an indication of the quality of the interaction with the other members of the community in terms of empathy and social presence.
2. Online communities as a relationship marketing tool for strengthening customer relationships

As effective relationship marketing tools, online communities are today a means of developing customer relationships (Flanagin and Metzer, 2001). Relationship Marketing, both in business practice and academic research, has experienced explosive growth in the past few decades (Palmatier et al., 2006; Srinivasan and Moorman, 2005). According to Morgan and Hunt (1994), we define relationship marketing as “all marketing activities directed towards establishing, developing, and maintaining successful relational exchanges.”

Most research and practice argues that stronger customer relationships can enhance business performance, including sales growth, profits and market share (Palmatier, Dant, Grewal & Evans, 2006; Crosby, Evans, and Cowles, 1990). This is why companies have heavily invested in relationship marketing strategies (Becker et al., 2009).

In practice, customer relationships develop through different phases (initiation, growth and retention). Top priority of companies is to manage customer relationships and their stages across the company to maximize the value of the customer base for the enterprise (Reinartz and Kumar, 2003).

Traditionally, customer initiation refers to newly acquired customers (Buttle 2004; Becker et al. 2009). Its main goal is the acquisition of new customers. Customer growth refers to the need of developing customer relationships in such a way they result in higher customer revenue and profitability (for instance, through cross selling and up selling), customer satisfaction and lifetime value (Kumar and Reinartz 2006). In the termination phase, companies need to put in place strategies to retain customers and maintain the relationship. According to the above premises, we adapt this relationship marketing perspective to online community and we define the stages of a customer relationship as initiation, growth and retention.

In sum, we will present a scorecard of KPIs that will help companies to strengthen the different stages of the customer relationship through online communities seen as an Information System.

3. Literature review on online community success

Online community success has been defined in different ways; in fact today there is no general consensus on the definition of online community success. Leimester (2006) classifies success’ definitions according to the different stakeholders (community members, developers, moderators, managers and financial sponsors).

Leimeister and Sidiras (2004) compiled a list of 30 different success factors drawn from existing research in information systems and other fields and ranked them according to the importance from the perspective of operators and participants; among the factors they identify the stability of the website, the assistance of new members by experienced members and offering up to date content.

From the perspective of online community members, many researchers (Kotler and Armstrong 1989; Fournier and Yao 1997; Oliver 1999; Reichheld and Schefter 2000; Cyr et al. 2007) have identified sense of community and loyalty as factors measuring the success of an online community. More precisely, Koh and Kim (2003) proposed various determinants of the sense of online community, among them, enjoyment derived from interactions with other members and enthusiasm. Lin and Lee (2006) define online community success as member
loyalty. The authors have identified the three dimensions of quality (system quality, information quality and service quality) that are the determinants of member loyalty.

From the perspective of the developers, Preece (2001) identifies two factors – sociability and usability – that would facilitate the success of an online community. Sociability measures refer to the development of interactions among members and include number of participants, number of messages per member or per active member, member’s interactivity, user satisfaction, reciprocity, quality of contribution, flaming and uncivil behavior and trustworthiness. Usability category contains web usability and communications software (speed of learning, user’s retention of the software, number of errors that users make.).

Later, Leismeister et al. (2006) identified financial success, lifetime existence on the market, continuous membership growth and growth of user-generated content as determinants of online community success. The authors found that the most important determinants of success were handling members’ data, reaction time on the web site and stability of the web site.

Moreover, research on online community success has generally focused on determining success factors without proposing precise KPIs. An exception is represented by Cothrel (2000, p.3), who proposed 14 measures for measuring the success of an online community including: Unique visitors, Page view, Session time, Community click-through (what percentage of visitors the home page click through to a community program, Registered members, Postings per day/week/month, Page additions, Page revisions, Peak number of concurrent users, Total number of users, Audience penetration (if the total size of the target population is known), Repeat visits, and Frequent visitors.

Online communities can be considered as a form of Internet based information system (Watcher et al 2000. As a consequence, we can consider the KPIs that have been proposed for web site design.

For instance, Nielsen (1993, 2000) proposed KPIs related to web site design such as response time, credibility and content, and consistency of the interface.

4. Our Scorecard of KPIs

We here present an extract of our scorecard of KPIs for measuring the online community success. As it is possible to see, KPIs are classified according to two different dimensions, the relationship marketing one and the information system one.

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Growth</th>
<th>Retention</th>
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<tbody>
<tr>
<td><strong>System Quality</strong></td>
<td>Unique visitors</td>
<td>Frequency of use</td>
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<tr>
<td></td>
<td>Peak number of concurrent users</td>
<td>Session time</td>
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<tr>
<td></td>
<td>Total number of users</td>
<td>Postings per day/week/month</td>
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<tr>
<td></td>
<td>Consistency of the interface</td>
<td>Frequent visitors</td>
</tr>
<tr>
<td><strong>Information Quality</strong></td>
<td>Page views</td>
<td>Community click-through</td>
</tr>
<tr>
<td></td>
<td>Credibility and content</td>
<td>Community program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of messages per member</td>
</tr>
</tbody>
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### References

- Lin, HF (2006), Understanding behavioural intention to participate in virtual communities, CyberPsychology & Behavior, 9:540-47

