The Tradeoff Between Online Community Activity and Consumption: Evidence from Online Poker

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Abstract

This research explores the connection between online consumption and online community participation activity. Using longitudinal data that contains detailed information about 4,475 online poker players' gaming activity and online community activity over 58 months, this paper finds that the general positive relationship between consumption and community activity is very strong at the level of the community, but weak at the level of individual participants. Participants experience a trade-off between community activity and consumption. An analysis of consumer lifecycles reveals that community activity substitutes actual consumption: Consumers increase community activity and decrease consumption during their usage of the poker service.

1. Introduction

A large body of 21st century’s marketing literature accentuates the importance of online communities in the business-to-consumer context (see e.g. [18][19][4]). Several empirical studies have showed positive associations between online participation and the business outcomes of related businesses. Participation in consumer communities fuels positive word-of-mouth behavior and influences purchase intentions [1], increases loyalty both to the brand and the community [1], creates a sense of “oppositional loyalty” toward products from competing brands [25] and fosters new product adoption [28].

Some communities are more directly linked to consumption than others. Fairly little is known about the relationship between community activity and the kind of consumption that is very intimately linked with a community or that happens within or through a community. In particular, the relationship between community activity and consumption at the level of the individual vs. at the level of the community in these kinds of contexts is not well researched. Furthermore, prior literature does not offer insights into how an individual’s ratio between consumption and community activity changes or stays constant over time. Ultimately, this research aims to enrich and extent our extant understanding by answering three research questions: First of all, the purpose is to explore how the two value creating functions, consumption activity and community activity, are related to each other in company-driven, online community based businesses. It is essential to explore this relationship since online community members can be seen as having both economical and social motivations in terms of participation (see e.g. [5]). Thus, to commercially utilize online communities both economical and social motives should be harmonically balanced [5].

Secondly, this research explores the extent to which consumption and community activity are interrelated in online communities of consumption at an individual level. This question is fundamental since members of online communities of consumption may have different orientations towards consumption and community interaction [18]. If the members of an online community can be clearly identified based on consumption and community activity, companies may utilize this categorization and lead the community according to the characteristics of its orientation groups. According to social influence and sales literature, various orientation groups respond distinctly different to dissimilar influence attempts (see e.g. [15][16][27][22][14][23]) and this kind of resonance has an impact on commercial outputs, such as sales performance [22][14].

Thirdly, as this research data is longitudinal by nature, it allows for an analysis of the lifecycles of community members. This paper thus also assesses whether the relationship between consumption activity and community activity changes during the consumer lifecycle. Since the revenue flow of several company-led online communities of consumption is primarily based on the actual consumption of their
members (rather than social interaction), it is noteworthy to pay attention to how the relationship between these two value creating functions evolves in the long term.

This paper investigates the relationship between consumption and community activity in an online poker context. The prominent popularity of poker in the 21st century has brought about novel poker business models and communities. One distinct example of this is the emergence of so-called poker affiliate sites. Online poker affiliate communities are special online communities in the sense that they not only offer social interaction in the form of discussion forums and blogs but also clear economic benefits for their members. Probably the most common and most used economic benefit enabler is the “rakeback” system through which a member of an online poker affiliate site receives a partial refund for the fee that he or she pays for playing each poker hand. These rakeback deals range from 30 to 50%, i.e. poker players who play through affiliates receive refunds corresponding to almost half of their online casino fee payments. For active online poker players, the rakeback refund may be thousands of dollars or Euros on a monthly level. If an active player does not gain any monetary benefits from the actual online poker games (i.e. the net of [wins-losses-rake fees = 0] at the end of a month), he/she may still earn thousands in hand from the rakeback refunds.

For affiliate communities, consumption activity of its members is an essential component of business logic. The business model of poker affiliate sites is to a great extent, often even entirely, based on rake commissions that poker players produce to the company through each played poker hand. Similar to many other online affiliate partnerships (see e.g. [2]), also online poker affiliates get compensated for each paying customer. Herein, the affiliate partner directs paying customers (i.e. people that pay money to play against each other) to online poker rooms that, in turn, pay a certain percentage commission from affiliate player's overall rake to the administrator of an affiliate site. Cash flow-wise poker affiliate sites transfer the rake refund to a member's online casino account and keep their percentage commission when doing so. Since these rake refund commissions are the primary, and often the only, source of income for the poker affiliate sites, the revenue creation logic of an affiliate site is strongly based on active poker play (i.e. consumption) of its members. Ultimately, consumption activity is a fundamental factor contributing to the existence of online affiliate communities. Given that there are very significant economic benefits to belonging and playing through an affiliate community, members' motives for joining and staying are not be merely socially interpreted (see e.g. [11]).

2. Literature review

2.1. Online communities of consumption

Online or virtual communities have been widely researched in the field of marketing (see e.g. [18][19][4]), sociology (see e.g. [12]), and psychology (see e.g. [8][7]). Even if different types of virtual communities exist [4], research from the marketing and business perspective focuses mainly on communities that have evolved around the consumption of a particular product, service or experience. Kozinets ([18], p. 254) defines these consumption-oriented online communities as "a specific subgroup of virtual communities that explicitly center upon consumption-related interests. [These communities are] affiliative groups whose online interactions are based upon shared enthusiasm for, and knowledge of, and specific consumption activity or related group of activities". Online communities of consumption may be "organically" evolved around independent consumers (see e.g. [25]) or they may be produced by commercial parties [1][21]. In particular, business-driven online communities may entail virtual markets [2], meaning that commerce and consumption are also possible activities in the community.

There are a number of reasons why community activity in general and the most active community members in particular are useful for community based online businesses. This paper is particularly motivated to examine both levels and their relationships. At the level of the community, the level of activity is related to the strength of identity within the community and thereby to the value of the community to key stakeholders [1]. Community activity has a particular role in maintaining the social appeal of engagement, the long-term sustenance of the community [17] and thereby the business logic behind it.

Instead of just belonging to a community, members’ active participation in the community creates a mutually reinforcing cycle that increases group cohesion and facilitates efficient and enjoyable information sharing [9]. At the level of the individual activities, the more members participate by e.g. commenting, blogging, posting and co-creating contents, the more they feel that relevant knowledge is shared, the faster ideas are disseminated and more emotional support is given and received [17]. The significance of single individuals in creating and
maintaining the social relevance of community engagement is a reminder of the need to focus on the individuals.

Using a rough dichotomy, the observable consumer behavior in online communities can be divided into consumption activity and community activity (e.g. posting comments on discussion forums) [18][19]. As Kozinets [18][19] presents (see Figure 1), online community members can be categorized based on these activities. Fundamentally, insiders (i.e. high consumption and community activity) have been regarded as an ideal online community group since this segment can be seen as producing both economical and social value for the community [18][19]. Tourists that are passive in terms of both consumption and community activity represent the other end of the continuum. Devotees and minglers represent the other two combinations.

Figure 1. Types of members in online communities of consumption

The classification of online community members based on consumption orientation and interaction tendency is similar to the concept of “buyer orientations” which is a well-known theme in the sales literature (see e.g. [27][22]). Accordingly, individuals may be classified based on their orientation towards task handling or socializing in transaction situations [27][29]. In the other end of the continuum are consumers with a task orientation [27]. These consumers are focused on the transaction task itself and bypass consciously activities that are considered inefficient with regard to the accomplishment of the task, such as non-goal oriented social interaction [27][22]. In Kozinets’ [18] model, devotees can be considered as being task oriented. On the contrary, consumers with an interaction orientation are mainly focused on relational elements in transactional situations [27]. These type of consumers want to create personally satisfying relationships with other people. In the model, minglers can be seen as representing this orientation group.

The third group, self-oriented consumers are not focused on either of these activities [27]. In online communities of consumption, tourists can be seen as belonging to this group. Yet, while Kozinets [18][19] introduces a fourth group, insiders, where both consumption and community activity are high, prior literature on consumer orientation does not support the idea of consumers being both task and interaction oriented (see e.g. [27][22]). Even if a customer’s orientation is not a personality trait, it is possible to think that the belonging of an individual to a certain group is somewhat stable [27][22]. Since the idea of dualistic orientation has not been introduced in an offline environment, it may well be that it barely exists in an online community context.

2.2. Scarcity of time

The time allocation among people has been studied for decades in economics (see e.g. [6]). According to DeSerpa [10], people assess benefits based on the allocated time. Decisions are thereby inclined to monetary and temporal limitations [10]. As consuming any kind of a commodity requires a certain amount of temporal allocation [10], people are forced to make trade-offs between other substitute activities.

Online poker and its communal nature can be seen to strongly reflect the trade-offs of temporal allocation. In an online poker play, a player must be continuously intensively present and make constant real time actions, such as raise bets or fold a poker hand. As the actual consumption is hectic, it is very unlikely that a player would simultaneously take part in the community activity by, for instance, reading forum messages and/or producing content to the community. Hereby, drawing on the orientations of individuals and scarcity of time, we hypothesize that individual consumption activity and community activity are, at least to some extent, substitutes in this context where actual consumption is time-consuming.

2.3. Ratio between consumption and community activity in the long term

There is little prior empirical research on how the relationship between customers’ online consumption and community activity evolves in the community
level over time. Even if observation lets us generally assume that community involvement and consumption are interrelated [1][25][28], there is little empirical knowledge on the relationship of these two in the long run. Prior literature offers justified assumptions to all three scenarios, that is, to the notions that the relationship between consumption and community activity stays somewhat stable, that community activity is replaced by consumption, and that consumption is replaced by socializing. The stability in the relationship between consumption and community activities may be justified by considering the orientation emphases of community members. In other words, since the community consists of a group of individuals where each community member can be seen as having a somewhat stable orientation towards consumption and community activities [27][22], the individual orientations stay fairly constant and, thereby, also the relationship stays unchangeable at the community level. Especially, this assumption may be considered as being valid with regard to large communities, such as the community of interest in this research, where individual changes (e.g. an increase in the amount of new active members or decrease in the amount of old active members) cannot be clearly detected in the total community level.

On the other hand, it is possible to argue that the ratio transforms to be more consumption-oriented over time. When a utilitarian poker player, who treats poker and the community as an instrument, reaches a certain level of know-how, he/she perceives that he/she is not dependent on the community's help and support anymore. Hereby, this person may allocate his/her time to poker play (i.e. utilitarian money seeking) fully instead of allocating parts of it to community activity.

On the contrary, a person may feel that he/she benefits more when he/she allocates his/her time to social, hedonic and/or community activities instead of actual play. Respectively, if a player's involvement with the poker consumption activity decreases, but he/she still has a strong and meaningful relationship with the community, he/she may channel extra time, that is not spent for gaming, into social interaction and, thus, total community activity may increase. This may happen with regard to such players who have at first had a very instrumental relationship with the community utilizing solely the rakeback system of the community. According to social influence literature, even a purely instrumental relationship may develop into a satisfying self-defining relationship over time [18]. In this context, an active player may start to feel being part of the community and, thus, be more willing to socialize with other members.

Additionally, it can be argued that is possible that a player satisfies his/her consumption needs through community activity. Here, mere poker discussions would lower the player's need for actual play and the player would be substituting consumption for community activity. This viewpoint supports the concept of "reveling" that is prominent in hedonic consumption activity. Accordingly, when the hedonic value of "reveling" is great enough, the customer may experience a minor need to make the purchase as in other cases when hedonic value is the main motive for purchasing [3][26]. This hedonic value may substitute the satisfaction of actual play particularly for recreational and hedonic poker players, and players that grow more hedonistic over time.

Since there are equally valid explanations to each of these three scenarios dealing with the development of the relationship between consumption and community activity, we cannot, in a justified manner, offer any kind of hypotheses in the support of either scenario.

3. Data

The research data is collected from a European poker affiliate SME. The data contains information about poker playing activity (i.e. rake details; the mean rake is 56.3 Euro per member per month) and community activity (i.e. forum and blog posts; the mean number of posts is 6.125 per member per month) from 4,475 active (who have either posted or played during the last ten months) poker players. For clarity, a rake is a monetary fee that the poker room keeps for every game. Even though some types of rooms, games and tables can have somewhat different rakes, at the level of hundreds and thousands of events, the rakes even out and represent a very accurate measure of playing activity. A single game lasts on average under one minute, their variance is not large (two minutes is a very long game) and thus thousands of games are played.

The data covers altogether 34,209 observations that have been collected during a 58-month long research period (August 2006 - May 2011). In the data analysis, we have excluded passive community members that have neither contributed to consumption nor community activities during their membership. Thus, our research data includes only information about active community members. Herein, an active member refers to a member that has played poker through the affiliate system and/or at some point or continuously produces content to the community. These members have, moreover, been
active for at least 10 months. We removed obvious outliers from the data, by removing members from the analysis that belonged to the lower 2.5 percentile or higher 97.5 percentile on both consumption and activity.

4. Analyses and results

4.1. Monthly consumption and activity

In order to understand the relationship between consumption and community activity, the correlation of generated rakes and community posts was analyzed at the level of the entire community. Figure 2 shows a scatterplot of the average monthly consumption (rake) and community activity (number of posts) during the lifetime of the service. This aggregated view of the data seems to reveal a strong positive relationship between community activity and consumption.

Figure 2. Relationship between monthly consumption and community activity

![Figure 2](image)

A linear regression of consumption on community activity confirms this (naive) view: $\beta_{posts} = 100.65, t = 15.975, p < .001$. This simple model provides a good fit to the data with an $R^2$ of 0.820.

Looking at the data more closely however shows that the number of monthly active users largely explains the linear relationship between monthly consumption and monthly online activity: A linear regression of consumption on the number of active users, $\beta_{users} = 637.08, t = 15.879, p < .001$, provides a good fit, $R^2 = 0.818$. A subsequent linear regression of the residual consumption from this latter model on community activity shows that the (aggregated) consumption-community relationship is fully explained by the number of active users. The regression on the residual consumption shows no noticeable effect of community activity: $\beta_{posts} = 4.31, t = 687, p = .495$ with an $R^2$ of the model of $= 0.01$.

Hence, while at an aggregated level consumption and community activity seem to relate, this relationship is merely due to differences in the number of visitors of the service over different months.

4.2. Individual consumption and activity

Figure 3 plots the average community activity and the average consumption for each individual poker player over his or her lifetime. Inspection of the graphs shows that there is – at the individual level – no positive linear relationship between consumption and community activity. None of the consumers seem to belong to the “insiders” category as identified by Kozinets [1][2]. Rather, the scatterplot seems to imply a trade-off between consumption and community activity: There is a scarcity of time that limits the total resources consumers put to either consuming or contributing to the community.

Figure 3. Relationship between consumption and community activity at the individual level

![Figure 3](image)

Imposed on figure 3 are four lines indicating a simple relationship between consumption and community activity: The sum of resources (time) depleted by both consumption as well as community activity has a personal maximum which individual
consumers will not exceed. The diagonal lines in figure 3 show several such resource maxima for different consumers. Thus, consumption and activity are, at an individual level, seem to be related as follows: $T_i = C_i + A_i$, i.e.: the total resources $T_i$ of an individual consumer $i$ are limited and provided by the sum of consumption $C_i$ and community activity $A_i$.

To further examine the idea of a maximum total resource that is depleted both by consumer spending as well as community activities, we compute the sum of (standardized) consumption and community activity $T_i$ and fit a series of multilevel models to predict $T_i$.

The first of a series of such models can be written as:

$$T_{ij} = \mu + \mu_i + \sigma^2_{err}$$

where:

$\mu_i \sim N(0, \sigma^2_\mu)$  

Thus, the total resources $T_{ij}$ of individual $i$ at time in the service $j$ is modeled using an overall intercept $\mu$ and a individual level intercept $\mu_i$. The latter are distributed normal with mean 0 and variance $\sigma^2_\mu$.

This simple model is next extended to allow for an average effect of time in the service, and for individual level slopes for time in service, the latter again distributed normally with mean 0 and variance $\sigma^2_{time}$. This analysis shows that the variance in $\sigma^2_\mu$ is high: .60 on a residual variance of the model of 1.07. Thus, the total resources $T$ differ substantially between people.

The variance of the effect of time in the service is rather low $\sigma^2_{time} = .003$, and the average effect of time in the service is not significantly different from zero: $\beta_{time} = -.001, t = -.772, p \approx .62$. This latter analysis support the idea that over time the total resources of individuals spend does not change, and thus the sum of consumption and activity is constant.

### 4.3. From consumption to community activity

The analyses thus far show that there is no positive linear relationship between consumption and community activity at the level of individuals. Rather, individual consumption and activity levels are limited by a maximum resource. However, this still allows for individuals to change their consumption patterns during their usage time of the service: e.g. consumers could move from spending a relatively large share of their total resources on community activity to spending more on consumption. To examine this pattern we examine the ratio of community activity (+1 to prevent division by 0) over consumption (+1). Figure 4 gives an overview of this ratio averaged over the lifetime of consumers in the service.

From figure 4 there is a clear upward trend of the ratio of activity over spending. This implies that during their usage of the service consumers move away from consumption towards community activity. Fitting a multilevel model with random intercepts and slopes for time in the service – similar to the model for total resources presented in section 6.2 – to predict the ratio of activity over consumption confirms this: There is a significant positive average effect of time of use of the service on the ratio of community activity over consumption: $\beta_{time} = .04, t = 5.04, p < .01$. Possible non-linear effects of time in the service on the ratio of activity over consumption were not supported by model comparisons. Thus, based on this dataset, we conclude that the proportion of community activity of the total resources increases over time, and consequently the proportion of consumption decreases over time.

**Figure 4. Ratio of community activity vs. consumption in long-term memberships**

### 5. Discussions and implications

#### 5.1. Discussion

The identified differences between community and individual level relationships between community activity and consumption are novel to research on consumer behavior in online communities and community-based businesses. The most important finding is that individual- and community-level analyses yield very different observations about the relationship between
community activity and consumption. While prior studies have indicated that individuals highly active in both consumption and communities may be the most valuable ones to communities [18][19], this study suggests that a tradeoff between the two activities exist. Particularly, high-involvement in consumption and high-involvement in community activity are mutually exclusive and substitute activities. While both consumption and community activity are valuable for the community at large, they have multiple dynamic relationships and different people can be responsible for the different activities.

Hereby, the orientation directing consumer activities and the scarcity of time are the most likely reasons for the tradeoff. Among high-involvement consumers, poker represents a large proportion of total income, and other activities that compete for the same time have a high monetary opportunity cost. The utilitarian motives behind playing poker [13] decrease the likelihood of engaging in the social activities of the community. Active players can also perceive to possess sufficient know-how about the game to render participation unnecessary.

Some community members’ extremely high involvement with social activities can be explained with strong community identification. Kelman [15][16] states that an individual identifying strongly with a community has his/her conception of self-anchored to the logic of that community. By actively partaking in the community, he/she can perceive him/herself the way he/she desires. The phenomenon of active poker playing is associated with images of wealth and outgoing lifestyle, even if reality particularly in online poker is very different. Being socially active and living the game, having the right lifestyle and talking about the money involved (which represent a significant fraction of the volume in online poker fora) can be important parts of a player’s online identity, even if these features were absent in the person’s real life. By being very active in the community, a person can perceive him/herself as a professional-level poker player without active being one based on actual playing.

The results also indicated that understanding the longitudinal development of individual consumers’ consumption and community activities is important. The analysis of the ratio of community activity and consumption indicated that the longer people are active, the more (relatively) they partake in the community. This yields reason to believe that players’ utilitarian and hedonic preferences change over time and/or more hedonic social activities take the place of utilitarian activities. Particularly veteran poker players manifest reveling behavior, playing less and interacting more.

5.2. Managerial implications

The findings presented here have important implications for running online businesses with communities. Firstly, since is possible that there are no insiders in the Kozinets [18][19] sense of the word particularly in contexts where there is a significant time-substitution effect, the marketing and strategies can’t necessarily rely on them.

Secondly, there can be no uniform metric of customer value for different types of customers. Some customers yield economic value while others create and maintain the social value needed. If, at the scale of the community both are valuable, then both should be maintained.

Thirdly, based on the analyses, companies should not try to encourage users at either end of the consumption/community activity spectrum to increase the other activity. This is likely to hurt the value of that individual – very few individuals are useful from both perspectives, and the utility curve is very steep even though the company has actively tried to promote playing among posters and posting among players. The highly active consumers are generally more valuable to the company than high-involvement community members [20]. Since there is a substitution effect, particularly trying to get the consumers to partake more in online discussions can be dangerous. Encouraging highly active consumers to be more active in the community is justified only in situations, where the consumer’s increased community activity influences less active consumers to increase their activity. In poker, this could be having active players post things that are closely related to actual playing: games, tables, tournaments, times and rooms.

Fourthly, companies should watch out for consumers substituting consumption for community activity. In the growth phase of a business or an offering, it is good that the community activity is relatively higher than the playing activity. That feeds the spiral of creating critical mass for the community, keeping on attracting new members and getting them involved in consumption. In time, consumers can realize that they don’t need the consumption for satisfaction. On average, the longer their lifecycle is, the larger the probability of substitution becomes. It can be assumed that while some veterans need actions that keep them playing and away from the forums, some “veterans” would reduce their consumption even faster if the community didn’t act as a tie. This calls for customer segmentation and segment-specific proactive marketing particularly among highly active consumers with long lifecycles.
Fifthly, the findings presented generally emphasize the importance of analyzing and managing community activity and the activities of the individuals separately. Both need to be analyzed and the role of different segments in creating the desired general community activity needs to be understood.

Finally, this paper emphasizes the important area of combining of community participation data and business outcome data in research and practice. Many of the even more fine-grained marketing and strategy implications drawn by the poker company from this analysis would not have been possible without the simultaneous analysis of real-time, end-to-end community data. Database structures, IT services and business reporting need to be able to serve analysts and managers in a timely fashion in order to make sense of and efficiently manage community-based businesses.

5.3. Limitations and further research

There are some evident shortcomings in the data and the current presentation. Even though the analyzed period seems to capture the growth, maturity and decline phases of the business, data about the very early phases of the community was unavailable. Over a longer period of time, more lifecycle data about players who’ve actually quit will be available. Also, online poker and related affiliate business is not very stable, and the significant impact that legislative issues and general global trends have on single affiliates and communities could not be analyzed. No explicit data about the turnover of players or whether they have played through other online and offline channels was available. All of these are, however, commonly known to be particularly low for the analyzed affiliate community.

More importantly, this study falls short of a complete understanding about the relative importance of time. This paper was unable to relate the time spent online consuming (playing) and being active in the community, and has to rely on proxies of this activity (rakes and posts). Particularly consumption does necessarily have a linear relationship with time, as the people who play the most don’t necessarily win the most. Furthermore, it is intuitively possible that the time-consumption per unit (activity or spending) decreases over large numbers of units. We have not explicitly modeled such non-linear relationships in our presentation of the data.

The three most important avenues for continuing this research deal with examining the identified phenomena in contexts where a) time consumption can be closely monitored, b) the relationship between time and end-user value is exactly known and c) time is not an issue in consumption.

The first and second can be at least partly examined further in poker. For the purpose of generalizability within time-intensive consumption, however, parallel studies from other experiential offerings and contexts are needed. Ideally, these would be from both contexts where there’s a good mix of hedonic and utilitarian value (e.g. collecting hobbies, DIY investing) and contexts with largely if not purely hedonic value (e.g. watching movies).

The final issue needs extensions to industries, where value and/or utility can scale up. This opens the avenue for interesting phenomena like habituation effects (cf. [24]), diminishing marginal utility, addiction effects and hygiene levels. The hedonic/utilitarian mix is also interesting here.

Many of the identified phenomena would benefit from a combination of qualitative and quantitative analysis. What determines what kind of consumer or community member a new entrant becomes? What characterizes the sociology and psychology of the early, formative encounters? How do community identity or interpersonal relationships influence the observed dynamics? Why do people substitute community activity for consumption? And perhaps most interesting for online businesses at large: What drives the satisfaction that people get from “reveling” in communities and what kind of reveling is the consumption-substituting kind?

6. References


