

April/May 2008

# User Behavior in Consumer Generated Media CGM Services

Akito Inoue

Research Fellow, GLOCOM, International University of Japan

Center for Global Communications,  
International University of Japan

Harks Roppongi Bldg. 2F, 15-21  
Roppongi 6-chome, Minato-City,  
Tokyo 106-0032 Japan

URL <http://www.glocom.ac.jp/>

TEL +81-3-5411-6677  
FAX +81-3-5412-7111

---

## What Leads to the Success of CGM?

Recent years have seen an increased number of consumer generated media (CGM) services making headlines. The users of such Internet services voluntarily engage in the creation of their content. Examples of major services include Second Life, Nico Nico Douga (a video sharing site), YouTube, mixi (a social networking service site), and online games such as *World of Warcraft*. Some were only popular for a short time, but others have become sites continuously attracting a large number of users.

In the Japanese market, Second Life tends to be considered as little more than a topic of conversation. Its registered membership has grown drastically over the past two years, and the number of accounts is in excess of 13 million, however, the number of registered users seems to have peaked, with the actual number of members regularly using the service estimated at between 100,000 and 300,000.

Also, the volume of trade for the virtual currency in Second Life has declined to about 65% of the level observed 6 months ago. In the long run, the service still has potential for various developments, but even a generous assessment shows that it faces certain difficulties at present.

On the other hand, CGM services that grew rapidly in 2007 and gathered positive reviews from numerous users included Facebook, with approximately 70 million users worldwide, and Japan's Nico Nico Douga,

with more than 6 million users. It is not clear if this situation will continue for the both services, but they can be considered successes for now.

Then, what are factors that separate successful services from unsuccessful ones? This article proposes a hypothesis that will be useful in addressing this question.

## Ecosystem Model of *The Sims*

A model often used in discussions of user behavior in the online game world was proposed by Will Wright, the internationally known designer of *SimCity* (1989) and *The Sims* (2000). The model views the online game community as an ecosystem. According to Wright, the observation of the online user behavior in *The Sims* reveals six-degrees-of-separation relationships among the users as well as some power law distribution structures.

The diagrams in Figure 1 represent Wright's model. First of all, we see are a large number of general users who, relatively speaking, play the game passively. A small percentage of them subsequently become game enthusiasts who provide useful information to novice players or show some breathtaking game performances. Of these enthusiasts, a small portion becomes administrators of

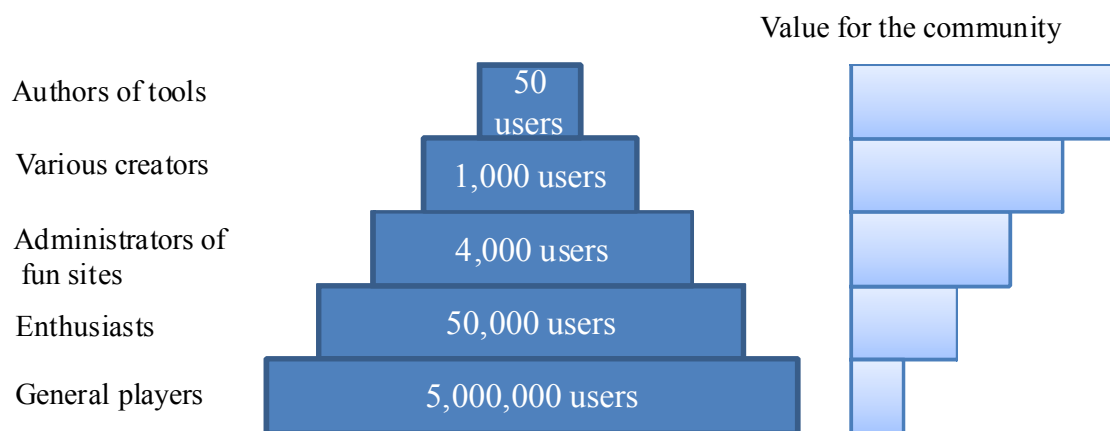
fan sites gathering information provided by other enthusiasts. Thanks to the existence of such fan sites and enthusiasts, general users can further enjoy the game as a CGM service. Furthermore, a small percentage of the fan site administrators then go on to play roles that create higher and higher values for the entire user community.

Wright also points out that the structure, in which a small group of highly skilled users making active contributions to the community is not maintained as fixed, rather users playing different roles in the community dynamically change their roles in the community over time.

## Ecosystem of Nico Nico Douga and its Power Law Structure

Although Wright's ecosystem model is well known to those who participate in the debate about online gaming communities, discussions have not been exhausted as to its validity. Hence, a simple analysis has been conducted using Nico Nico Douga, mentioned above as an example of successful CGM service.

Figure 1 Characteristics of the User Community for the Online Game *The Sims*



Source: Based on Wright (2001, 2003)

Table 1 User Activities at Nico Nico Douga (as of April 10, 2008)

Number of videos posted	962,861
Number of comments	1,068,805,733
Number of views	4,552,807,983

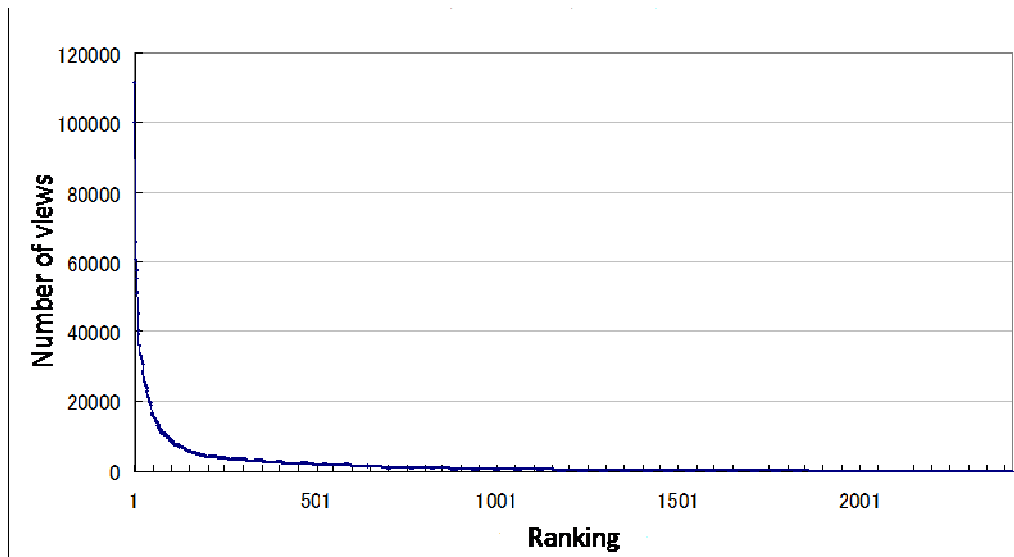
Source: Based on data published by niwango, Inc.

Table 1 shows the number of posted videos, comments, and views at Nico Nico Douga as of April 10, 2008. Similarly to the numbers shown for the ecosystem model discussed earlier, the number of views, which reflect the most passive form of participation, is the largest. Of that number, more than 20% add comments, which require a little more action on their part. The number of video posts is about 0.1% of the number of comments. The result shows a structure in which the more action a type of activity requires, the fewer such activities there are.

Furthermore, the ranking of the videos based on the number of views shows an interesting fact: it has a power law distribution. Figure 2 arranges the most viewed videos, as of December 31, 2007, according to the number of views.

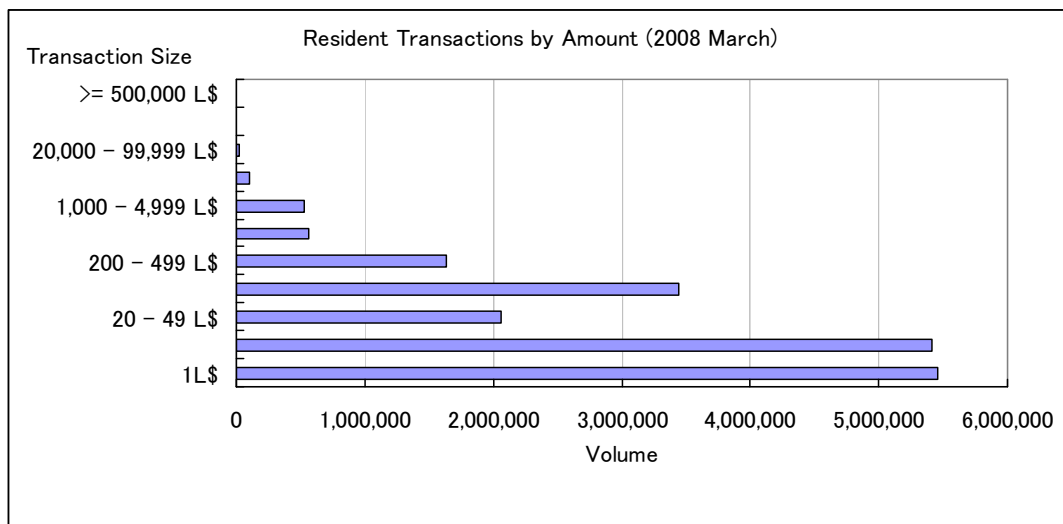
A similar chart can be drawn for the number of users in the most popular communities in mixi. Also, it is well known that the number of sales has such a power law distribution at amazon.com, though it may not be a pure CGM service.

Figure 2 Number of Views at Nico Nico Douga (as of December 31, 2007)



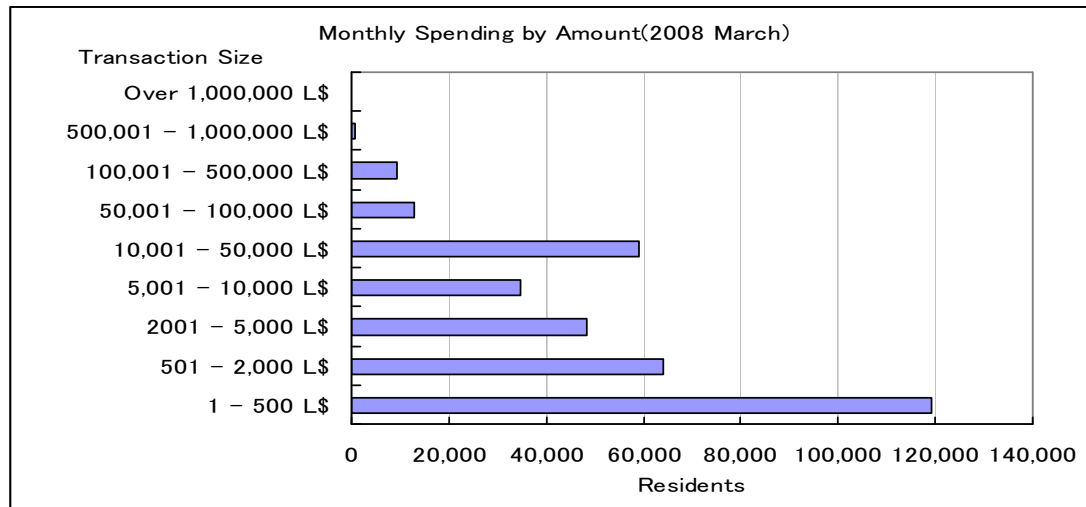
Source: Based on data published by Niwango, Inc.

Figure 3 Trade Volume of Linden Dollars in Second Life



Source: Based on data published by Linden Lab.

Figure 4. Monthly Spending in Second Life



Source: Based on data published by Linden Lab.

## User Participation in Second Life

What sort of chart can represent users' activities and contributions to the community in Second Life?

Different types of CGM services require different indexes to quantify the value for the community in the ecosystem model proposed by Will Wright. As such, services of a different nature cannot be compared rigorously. With this in mind, the amount of transactions of the virtual currency circulating in Second Life, "Linden dollars" (L\$), and the amount of spending by the users, or "residents," are shown in Figures 3 and 4, respectively. Linden Lab publishes both datasets.

Note the loosely M-shaped diagram for

both datasets. There is a dip around the L\$20-49 range for the transaction data, and as for the expenditure data, a dip is observed around L\$2,001-10,000/month. The data can be described as follows.

- (1) There is a small gap between large and small transactions, suggesting the scarcity of medium-sized transactions.
- (2) There are heavy spenders and light spenders, and the gap existing between them suggests that there are few medium-range spenders.

In other words, there is a tendency toward a bipolar condition, with users spending either a large amount or almost none. If Wright's ecosystem hypothesis is correct, this polarizing tendency seems to be a significant problem facing the CGM service.

## How to Make the Ecosystem Work?

The ecosystem model relates to Pareto's 80/20 rule: a small number of users who bring high values to the community exist among a large number of users who do not. However, and moreover, the model's important aspect is a dynamic flow of users where the passive majority and the high-value minority are fluid. That is to say, users who initially bring only low value to the community eventually become able to contribute high values.

What are the factors enabling such dynamics? A few candidates come to mind. One is to gather a large number of users even if they are passive users whose value to the community is low. This makes some sense considering that most of the community is dominated by those passive users who lack serious commitment. In this regard, Second Life was successful in bringing in a large number of users thanks to the heavy reporting of the service by newspapers and television from the end of 2006 through the fall of 2007. Though some of the registered users could not effectively log on to Second Life because of issues with the system requirement for their computers, Linden Lab must have acquired a large number of users who had barely heard the name Second Life. The transaction and

spending data actually show that a certain number of such users exist.

Another factor is whether there are sufficient number of users who are willing to produce attractive, high-value content. The idea being that achieving a certain level of content generates followers. Second Life seems to have actually adopted this strategy. As some have called it a paradise for creative types, it is well known that the service is used by many artists including musicians, architects and designers, and that a great number of its devotees are those professional creatives.

Having acquired high-value users as well as a certain number of (mostly passive) users, has Second Life experienced the emergence of the kind of dynamism Will Wright has suggested? It is not that Second Life completely lacks such dynamism, but it seems that the notion of fluidity has not been materialized sufficiently in Japan.

There is a possibility that the absence of a middle layer has been working negatively. There are certainly some users who have become devoted to Second Life and have done some amazing feats. Their activities are sufficiently interesting to make people notice the service's huge potential, which in turn attracts a certain number of users. However, compared with Nico Nico Douga,

mixi and Facebook, the hurdle for people to overcome in order to become immersed in Second Life is very high. During the course of this year, various commentators have pointed out the existence of this hurdle. To sum up, many users feel that they cannot imitate the interesting things done by some amazingly skilled enthusiasts. In such cases there is a potentially important role to be played by the users in the middle layer—users who are not extremely committed to the service but are gaining a fair amount of enjoyment from it. They can function as (1) approachable role models for newcomers with only a little experience with the service, (2) guides introducing enjoyable aspects of the service to novice-level users, and (3) creators adding variety and depth to the service content by, for example, making parodies of high-value materials produced by enthusiasts or producing various materials whose quality does not necessarily have to be high. These materials would add diversity and depth to the universe of artifacts in Second Life. In other words, they may be able to bridge the gap between enthusiasts and novices.

## Acquisition of the Middle Layer

The question now arises of how can such an important middle layer be effectively acquired? Though it seems too obvious, one crucial factor is that the service

provides content-producing tools that are easy to use by anyone and, at the same time, have sophistication to allow master users to create anything they wish.

For example, HTML can be regarded as one of the most successful very widely adopted CGM tools. Anyone who has just started exploring HTML can easily produce HTML code using blog tools and wikis which are highly accessible. After a little practice, it is possible to start writing basic HTML source code or creating simple web pages with the help of software such as Homepage Builder. When contrasted with a programming language such as C or Perl, one superb advantage of HTML is that browsers can show the content even if the code contains some syntax errors. When trying to learn HTML seriously, there is a very low risk of discouraging people with unsuccessful debugging. Experts can make cross-browser adjustments or combine HTML with CSS (Cascading Style Sheets) and Ajax, but even without such techniques HTML can be used effectively in a sufficiently wide range of situations. The great number of web pages seen on the Internet today can be attributed to HTML being a useful tool tolerant of imperfect code.

## Sustainability of the CGM Service

This article has proposed the hypothesis that the existence of a middle layer can contribute to the success of the CGM services. As to testing the validity of the hypothesis, there are still many issues. Different services need different ways to measure values relating to their community. A method for evaluating the extent to which the aforementioned mobility is actually working is also necessary. Further, data published by Second Life exhibit some arbitrariness in creating ranges for values.

Aside from these issues, we should not forget that the mere acquisition of a large membership base is probably a secondary factor in the analysis of CGM services. Even with a growing number of users, the lack of design elements which sustainably allow users to voluntarily create and enjoy content does not lead to a functional user community.

In the competition among large companies to create the de facto standard, it is imperative to acquire a sufficient number of users as quickly as possible. These companies can focus on, advertise, induce demand, and produce on a massive scale. However, for CGM services it is the users and not the service providers that supply objects to be enjoyed. Core production does not belong to the service providers, and there is no use expanding factories and increasing production. In such an

environment, the mere acquisition of users is probably not adequate. A unique method is discussed in *Crossing the Chasm*. Both capturing passive users and stimulating them to become active participants must be done simultaneously. What then makes such total design of a community possible?

Communities like those for CGM services are not restricted to the Internet; they also exist in the offline world. Eiko Ikegami (2005) argues that in the Edo period *haiku* encouraged the creation of a gigantic network of amateur poets spanning Japan because *haiku* as a hobby was both relatively easy for anyone to start and offered great depths for those who wanted to master it. In many respects, such a network resembles the communities for CGM services and can be considered one of the highly successful phenomena continuing to this day.

The world of CGM became a high-speed, large-scale phenomenon due to the advent of the Internet. This can be interpreted as a type of community formation process that has been accelerated and made very visible to us. In the discussion of the overall organization of our society, the growth of CGM will possibly continue to be an extremely interesting phenomenon to examine.

## Bibliography

- 1) Masuda, Naoki (2007) *Watashitachi Wa Dou Tsunagatteirunoka, (How Are We Connected?)*, Chuko Shinsho.
- 2) Ikegami, Eiko (2005) *Bonds Of Civility: Aesthetic Networks And The Political Origins Of Japanese Culture* Cambridge University Press.
- 3) Moore, Geoffrey A. (2002) *Crossing the Chasm*, Collins Business.
- 4) Wright, Will (2001), Presentation material at the Game Developers Conference 2001.
- 5) Wright, Will (2003), Presentation material at the PC Forum, "Models Come Alive."
- (4) Second Life Economic Statistics ([http://secondlife.co/whatis/economy\\_stats.php](http://secondlife.co/whatis/economy_stats.php))
- (5) Of course one may criticize that most of them did not even become passive repeat visitors.
- (6) According to Geoffrey Moore, technological products face a chasm while transitioning from the initial stage to explosive prevalence, and whether or not a product can overcome the gap becomes key to its widespread adoption. Strong marketing focused on overcoming the chasm is said to be the most important sales strategy for the high-tech industry.

#### Endnotes

- (1) As of April 10, 2008. From press releases published by Facebook (<http://www.facebook.com/press/info.php?statistics>)
- (2) As of March 21, 2008. From press releases published by Niwango, Inc. (<http://www.itmedia.co.jp/news/articles/0803/21/news040.html>)
- (3) For the 2,423 videos with 31 views or more. Log data (<http://toturev.sakura.ne.jp/nico/archive/record2007.zip>) published in the Nico Nico Douga ranking analysis (<http://toturev.sakura.ne.jp/nico/>) are used.

---

#### **Akito Inoue**

*Research Fellow, GLOCOM, the International University of Japan. Visiting researcher, SFC, Keio University. Graduated from Keio University (2003). Received a Master's degree from Keio University (media and governance, 2005). Inoue has been studying video games since 2002, specializing in the history of discourse on computer games. He is the administrator of "Critique of Games" a leading gaming website and organizer of RGN (Research on Game Design and Narrative) since 2006.*