Zeroboard, Easy-to-Install BBS
–Rough sketch for a techno-cultural maker history of the Korean Internet

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Abstract

This article focuses on makers as the actors who have created the Korean Internet. There is a lack of historical narratives focused on makers. This lack of narrative serves as a constraint not only to the evaluation of the past, but also to the imagination of the future. This article has an interest on software as a way of talking about creators and specifically, we focus on Zeroboard, which has been widely used and has had a big influence in the Korean Web to the present day. We want to investigate the effect of the interface of Zeroboard on the Korean Internet through its features of "easy-to-install", the history that each web maker had to bear such a technical problem, and an interface called the "Bulletin Board" that has become widely accepted by the web community of Korea. We briefly look at the background for which Zeroboard was actively embraced by some communities such as web designers in the early Korean Web. In the process, we also examine the functional and external features of Zeroboard, which has become a universal element of the Korean Web. By doing so, we draw a sketch for Zeroboard's history as a Korean Internet cultural history. This can contribute to constructing a complex view on the future of the Korean Internet, by reevaluating the unique meanings in Korean context that Zeroboard has in 2016.

1. Introduction

The *Korean Internet White Paper 2016*, published by the Korea Internet & Security Agency (KISA), contains the "Korean Internet History" timeline from 1981 to 2015. (2016, pp. 16-19) The timeline shows key events from three perspectives: industry and service, infrastructure, and policy. The content of the book is as follows: Chapter 1: Industry and Services, Chapter 2: Utilization, Chapter 3 Infrastructure, and Chapter 4: International Cooperation. The history of the internet as described in the categorization of timeline events and in the table of contents of the white paper excludes the individual from the making of Korean internet. The government and corporations are considered major actors, whereas individuals exist as passive users only represented by statistics, in statements like "domestic Internet users exceeded 40 million." In this perspective, individuals are mere users of services provided by corporations, which in turn are regulated and supported by national policies and the infrastructure that the country and enterprise installed together.

Of course, there is truth in such a framing. The early adoption of Internet infrastructure has been supported by national policy[1] and most Internet usage takes places within corporate services. However, the role of the individuals is not just limited to passive users. The openness of the Internet does not only mean that it is a protocol that anyone can use, but also that anyone can add their own creation to the Internet. The individual uses the Internet as given environment, but he or she plays the role of the maker as well. Moreover, the production by an individual is not limited to user-generated content within a standardized platform. It is possible for an individual to construct an Internet space by creating a platform such as a website and in fact, many individuals have done so. Hence, individuals also shape the Internet as corporations and governments do. The individuals who perform these productive roles are called makers in this article.[2]

In other words, the historical description of the Korean Internet White Paper 2016 excludes the role of individual makers. This is problematic in two aspects; first of all, it leaves out an important part in the formation of the Korean Internet. Individual makers have built small and big fragments of the Korean

[1] Kil-nam Chon, who is known as the 'Father of Korean Internet' contributing to the country's second connection to the Internet in the world after the U.S., came to Korea through an overseas scientist inducement program as part of its industrialization and conducted computer network research at a government-funded research institute. (Ahn, 2014)

[2] The more common expression for individuals on the Internet is user, and the expression for avoiding passive role is the producer. However, here we choose the term "maker" for two reasons: to eliminate the scope of interpretation limited to use a given platform or the production of content only, and to suggest a connection to the DIY and maker culture discussed in the hardware field.

Internet as well as created toolsets used to make the fragments; the culture formed through these productive activities spread as a universal production method. The activities of these creators are important elements that contributed to the current appearance of Korean Internet, its mechanism, and user experience.

Similarly and perhaps even more importantly, by omitting from the White Paper the role of makers who have contributed to the past and present of the Korean Internet, their role as subjects shaping the future is also excluded from consideration. If the actors who form the Internet environment are limited to the government or corporations, there is no other way for the individual but to hope for the best from the government or businesses in shaping the future environment. This is not only inconsistent with historical facts, but also a major constraint on the imagination of the open and the public with regards to platforms, especially in the current situation where the monopoly and centralization of online platforms are intensifying.

For these reasons, the role of makers in the history of Internet deserve more attention. In describing the history of makers, we are interested in software, especially Zeroboard, a bulletin-board software that served the role of a popular web publishing tool in South Korea. Using software as a way to engage with the history of the Internet has several advantages. First of all, the tools of production on the Internet, especially on the web where our interest lies, are software; and the same software also serves as medium of usage. Also, industrial services exist in the form of software. In other words, by looking at software the makers and the non-makers, the individual makers and the corporations all can be seen on the same plane. It is common for industrial workers to have individual creative projects at the same time, and for individual creators to join a company.

In this perspective, Zeroboard is an important symbol in terms of describing the history of makers in Korean Internet. Zeroboard is a PHP+MySQL based installable bulletin board system (BBS) written by developer Youngsoo Koh, a.k.a. “Zero”, in the late 90s. Version 1.0 was released at the end of 1999, Version 4 was at the beginning of 2001, and Version 4.1 was created at the beginning of 2002. After the entire project was acquired in 2009 by *Naver*, the biggest IT company in Korea, it changed its character to an open-source CMS (Content Management System) project and has been maintained since then.

Self-hosted BBS software such as Zeroboard, used for content publishing, had an important influence in the early days of the Korean Internet. The relatively easy installation processes offered by some software was welcomed by web designers who were increasing in numbers. Not only did BBS software have a crucial

role in shaping the small-scale web publishing format that is the personal website, but they also served as catalyst in web publishing-related communities that embraced both designers and developers.

On the other hand, Zeroboard was welcomed and continued to be famous in small-scale web authoring environments; it was used effectively as "the" bulletin board engine needed to create a website of a web community. As a result, the technical components such as membership sign-up and management or the interface design have been applied throughout community websites on the Korean Internet, and this has been accepted as the norm. It has shaped the landscape of the current community websites in Korea. Zeroboard can be seen as a transitional tool between text-based bulletin board system and the current Internet. In short, this software is an important artifact for evaluating and visualizing the role of makers[3] in the history of Korean Internet.

Critical views on how interfaces and the implementing code regulate us can be seen in Lessig (2006) and Zer-Aviv (2015). Lessig noted that the code that implements interfaces and underlying functions acts like a law in cyberspace and Zer-Aviv mentioned that interfaces require users to have a strict level of obedience. In particular, Zer-Aviv defined interfaces as "systems, equipments, concepts, intermediaries or boundaries between people" and emphasized that the interface on the web requires communication to be subjected to one-sided and dominant direction, as does in traditional TV and radio media.

Based on this view, we will investigate how Zeroboard's interface have affected Korean Internet through its "easy-to-install" traits, with regards to technical difficulties that individual web makers had to bear, and the "bulletin board" interface that became widely accepted in the web community in Korea. We briefly examine the background in which Zeroboard was widely accepted by some communities such as web designers in the early Korean web, and in the process, review the functional and external features of Zeroboard, which has become a universal element of community websites in Korea. By doing so, we draw a rough sketch of a history that positions Zeroboard in the Korean Internet history of maker culture.

2. Easy to install: Active adoption from the web designer community

Zeroboard was the predominant bulletin board engine in the Korean web in the early 2000s. Technical aspects for deploying websites and social backgrounds had changed as the Web emerged. Back then, there was more technical knowledge needed than now even for simply posting on the Internet. For example, one had to know how to set up and install the relevant deploying environment. In addition, the emergence of new media has increased demand for web designers and developers in various industries, but there were not

[3] There are two levels of production here: creating software as a tool can be used by makers—Zeroboard itself or the themes of it—and using this tool to create a website. Of course, the website is also software.

enough advanced technicians to handle them, since the popular use of the Web was less than five years old. To meet this demand, young beginner-level developers and designers have been educated in large numbers though private computer education institutions as well as students graduating from traditional educational institutions. Zeroboard provided a manual which allowed users, especially web designers rather than developers, to easily install and use. Thanks to theme-devoted communities created by the activities of these designers, Zeroboard was able to position itself as a well-designed BBS system that designers can easily use. In result, this led to the formation of large website authoring communities.

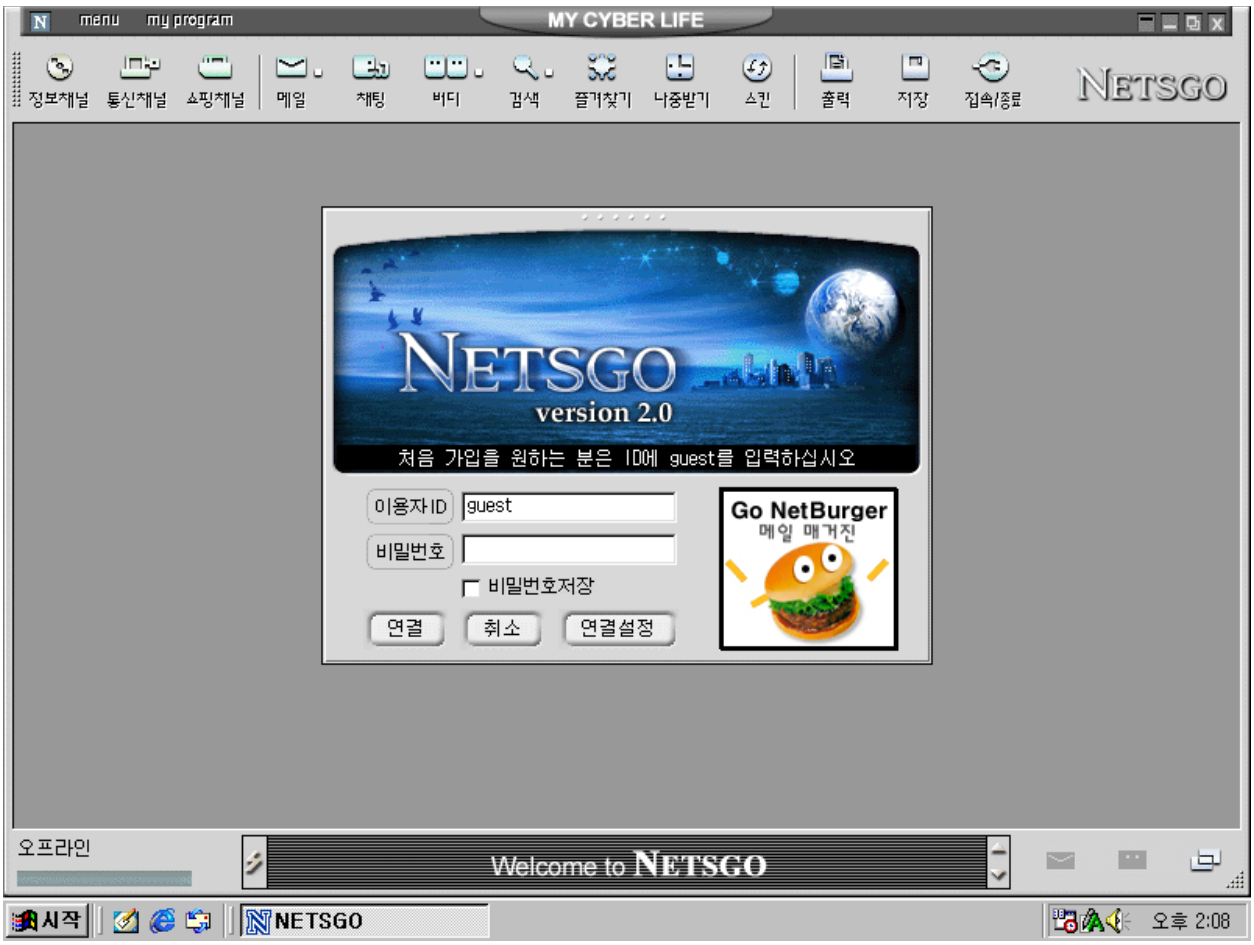

Fig. 1. Netsgo Browser v2.0

2.1. Technical Requirements

In the late 90s, as high-speed Internet service like ADSL spread to Korea, there had been attempts to communicate using web browser, rather than text-based BBS. *Netsgo* and *Channeli*, two companies that aimed to provide services that were similar with text-based BBS, were clear examples. They provided Internet services using a custom-modified browser called "*Netsgo Browser*" and "*Channel View*", respectively. However, the services had transitional characteristics, since they had similar configurations to text-based

BBS, except that it was on color screen and the connection was made through dial-up. These are the first services that allowed people who used text-based BBS before to have access the web environment and to learn about technical requirements of "Personal Homepage." Between 1998 and 1999, on the top of the high-speed Internet access, it was possible to use the Web protocol, connect "Homepage" through web browser rather than text-based BBS and communicate with remote people. Here are some of the technical requirements for creating a personal website in the infrastructure of that time.

2.1.1. Online storage for HTML documents (web hosting)

Systems that rent out some space out of the web server that hosts websites; nowadays, typical users are not especially required to know how to set up these spaces, or even about their existence. But this was a time where the only available medium for online expression of one's opinions—a task easily achievable by a tweet or *Instagram* photo nowadays—was the website. Therefore, many companies including existing BBS services like *Chollian* and newcomers like *Netsgo* and *Channeli* started providing website storage as a default feature like an email account. Companies like *Netian* and *Hihome* gained popularity by giving out free space for personal websites. Most of these early services were web portals that allowed limited uploads of HTML documents. Other services that specialized in web hosting soon emerged; these provided support for database-connected Common Gateway Interface (CGI) bulletin boards like Zeroboard. *Cafe24*(http://cafe24.com) and *Gabia*(http://gabia.com) are among early web hosting companies that are still active in Korea. These services typically provided support for web programming languages like PHP, restricted database access and storage, and throttled traffic.

2.1.2. Domain Names

While personal domain names were not technically required—website storage services usually provided subdomains that included usernames, like http://chollian.co.kr/~mnsota—some power users went through the effort of purchasing them. The pe.kr domain became available in June 1996; purchase of the personal-use domain was restricted to one per individual, and some people tried to preoccupy popular domains. One problem was that due to technical limitations of some web hosting services, the purchased domain could not be perfectly connected to the website. In order to address this problem, some companies provided forwarding services from the domain name to the hosting server's address, usually with an advertisement in between. Services like *wo.to* provided short domain names for users without personal domain names.

Fig 2. Namo Web Editor 3.0

2.1.3. HTML Authoring Tool

WYSIWYG type publishing tools spared the user from directly engaging HTML code in order to build a personal website. The South Korean software *Namo Web Editor* was released in 1997; *Macromedia Dreamweaver* and *Microsoft Frontpage* also became popular around that period. In the Korean context, *Namo Web Editor* was especially popular thanks to its Korean language support and its familiar interface—similar to that of the popular *Hangul Word Processor*.

2.1.4. Bulletin boards, guestbooks (CGI)

Building bulletin boards and guestbooks where people can write provided a space for communication between individuals. The metaphor of visiting someone's home ("home page") persisted until *Facebook* introduced the newsfeed paradigm. It was typical that a visitor would leave a message, like "Nice website," in order to leave their trail. Another tool that served a similar purpose was the hit counter. The hit counter provides a very basic statistics, the sum of page visits; popular websites tended to emphasize the hit counter, in a boating manner.

One thing about bulletin boards is that they are programs running on the web; there are technical hurdles on the way of using them. Required technical skills included knowledge of languages like Perl or PHP, databases like MySQL; many web companies, including *Netian* and *Chollian*, did not even support these software. This leads us to the appearance of free web hosting sites based on communities as described below.

2.2. Social Background: Emergence of beginner-level web engineers

From a macroscopic point of view, it was the time when large corporations in Korea needed a website to adapt to the web environment and at the same time, tried new business models that actively utilized the web. Newly created movie theaters wanted to make online bookings possible through the web; young telecommunication companies wanted to be able to be paid for usage fees, and manage additional services on the web. Banks were introducing Internet banking and terms like B2B, SI, and ERP were commonly found in newspapers. In the society as a whole, there had been a lot of discussions about the new possibilities that the web will bring. In the computer section of bookstores, it was easy to find books such as "The way of becoming a Webmaster." Newspapers and TV defined the term "Digital Worlds" as the connected future of the Internet, mobile phones and refrigerators.

These beginner-level designers and developers are the ones who tried to create a personal website on the early web where there was not much production knowledge accumulated. They knew the possibility of this new media and experimented with it. Growing up with text-based BBS, the people whose age were ranged from teenagers to twenties used nickname in online and created a website under a plan because they wanted to share contents. Specifically, there were talented teenagers who almost natively dealt with computers and the Internet, and there was a website hosting service only for teenagers.

In addition, there were many creative people sensitive to both design and content production. Many of them had entered the rapidly expanding website production field after graduating from high school. Moreover, a large number of web designers who have been trained in the basics of web design at university and private computer education school such as *Green Computer Art School* had joined the same creative field. However, since the number of advanced web designers was very small, it was relatively easier for beginner-level web designers to be competent.

2.3. Relatively easy installation process of Zeroboard

One of the reasons why Zeroboard was able to gain the most attention among the bulletin board engines was that because it appealed to these makers. On the other hand, *JSBoard*, which was another bulletin board engine that provided a similar or better functionality than Zeroboard, got much attention in the *Linux Sarang Net*, a community website that distributed *JSBoard* and was loved by a lot of developers and server engineers at the time. However, *JSBoard* was much more complicated to install than Zeroboard. This was partly a problem with the install and administration interfaces, but there was also a lack of documentation that was easy enough to non-IT professionals and designers mentioned in Section 2.2.

Zeroboard, on the other hand, provided manuals in detail, lots of step-by-step screenshots. In addition to this, the knowledge sharing community that will be mentioned below was also a factor to appeal to nonprofessional makers. The custom themes created by some of the designers who succeeded to installing Zeroboard were enough to attract the various users and makers. This trend had led to the use of Zeroboard in a wide variety of ways including a free bulletin board, a guestbook, and an inquiry bulletin board of a number of personal and small company websites.

2.4. Emergence of authoring and knowledge-sharing communities that meets technical requirements

Fig 3. Zzagn Community, circa 2001

It was very important issue for personal website creators to have a website that can run software required by Zeroboard. In mid 90s, this was not achievable in popular web services such as *Chollian* and *Netian*; there were very troublesome problems, in that users had to build a website from scratch by renting a dedicated server. Around 1999, some communities were created to solve this problem and let users make richer websites. For example, *Zzagn* ("Small") Community, which aims to provide whole development environment to personal website creators, an administrator called *Dokjaeja* ("The Dictator") selected new tenants with relatively closed policies and gave them almost unlimited storage and development environment where they could run PHP and MySQL by free. Most of the people in this community had made high-quality content or well-designed website. Tenants of *Zzagn* community had been considered as good web designers or developers.

Fig 4. NZEO.com, circa 2004

One of the characteristics of these web-hosting based communities is that there were many web design and development tutorial websites to share knowledge to solve technical problems described above. In the list of tenants of *Zzagn Community*, there were 37 web design-related websites, accounting for 31% of the total 117 tenants, making up the largest percentage of these sub-categories. They shared the knowledge they gained and through it, formed a community using these content. A prominent example is the "Fusion" website of designers and developers, which means that a website where designers and developers collaborate to create and operate a website together. The websites such as the *ZeZZ* of *Zephyr* (developer) and *Wizz* (designer), the *Zetyx* of *Zero* (Developer) and *Styx* (Designer) had evolved into communities where users share their daily lives along with the work of many web designers and developers. This led to the creation of the *NZEO* (http://nzeo.com) community, which was the largest web authoring community in Korea aimed to distribute Zeroboard and share design and development knowledge.

The "easy-to-install" Internet environment, where one needed to build one's website and use it to communicate, provided a level of freedom incomparable to that of social network services; however, one needed to overcome a significant level of technical hurdle. Still, the influx of Internet user population was inevitable. During this process, self-hosted solutions like Zeroboard touched a sweet spot between

technical difficulty and desire for one's expression; they affected the shaping of a personal website culture during the following 7 to 8 years, persisting throughout the popularization of *Cyworld Minihompy*[4] (circa 2003) and the deprecation of *Naver Myhome*[5] (2008). Individuals who managed to jump over the technical hurdles developed design strategies like image-text, shared Photoshop tutorials, created quality contents and managed websites. It was a time of Web makers, comparable to the 2010s' hardware maker movement.

3. Bulletin Board as a basic form of Korean web

While the "self-hosted" aspect of BBS software had a role in shaping the personal website culture in the early Korean web, the bulletin board is still dominating the Korean web as interface for creating/reading/updating/deleting (CRUD) content on the Internet. Especially, it has had a crucial role in shaping the structures of online community websites. The interface of BBS services was granted a life extension through Zeroboard; along with additional functionalities such as membership management, this has been applied to the building of online communities—and continues to do so.

Kim Jung-ja(2003) finds the origin of the bulletin board in the American BBS system in the late 1970s in a study of electronic bulletin board writing. In United States, *Compuserve* first started commercial BBS systems in 1979, and many private BBS systems were created afterwards. In Korea, BBS system (called "PC Communication" in Korea) was introduced in the late 80s by telecommunication companies such as *Chollian*, *Nownuri* and *Hitel*. She especially points out that the spread of the bulletin board interfaces to the web came from the desire of many people to use web services familiarly with gaining popularity of the web. In fact, the BBS interface consisted of 20 pages of posts which consisted of title, date, author formed in a table view and to see the post, a user should type the number of the post that he or she wanted to. Zeroboard had an almost identical interface.

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4 *Cyworld MiniHompy* is a personal website service created around 2003, which gained massive popularity in Korea with the concept of decorating its space in a small popup of 1024 × 768px. The company made a profit by charging for acts such as registering background music or decorating *Miniroom*, which existed as small modules in a website. It has been declining as social media such as *Facebook* have grown.

5 *Myhome* is a personal website service provided by *Naver*, the largest IT company in Korea. Users could not install PHP programs but the company provided bulletin boards and guestbooks in the service.

Fig 5. Hitel, Text-based BBS system(above), Zeroboard (below)

Thanks to Zeroboard's popularity, Korean Internet users became more and more familiar to bulletin board interfaces. Bulletin boards became a standard feature not only for personal websites, as mentioned above, but for basically every website. Company websites have boards for customer inquiries; popular online community platforms such as *Cyworld Club* and *Daum Cafe* are also designed as collection of boards. This was almost without exception how every website requiring to give access to many users was created.

Name	URL	BBS System	Notes
DCInside	http://gall.dcinside.com	zboard4 (Zeroboard version 4) → custom framework	Purchased from NZEO and used until the mid-2000s, And changed to their own engine.
Ilgan Best	http://ilbe.com	XpressEngine	XpressEngine is an open-source CMS project started by developer Youngsoo Koh, who was a developer of Zeroboard in Naver, a Korean Internet company.
SLRCLUB	http://slrclub.com	zboard4	Using the table view as zboard.php, but further pages are unclear.
Ppomppu	http://ppomppu.com	zboard4	
Parkoz	http://parkoz.com	zboard4	
CDPKorea	http://seeko.co.kr	zboard4	
Clien	clien.net	zboard4 → gnuboard	It was Zeroboard at the beginning of the community, but then changed to GNUBoard, which is another bulletin board engine.
Bestiz	bestiz.net	zboard4	

Table 1. A List of Communities that use Zeroboard

As Zeroboard began to dominate personal websites, powerful membership management functionalities were added. This enabled the management of a basic community, where members can sign up and submit entries. Many structural characteristics that many Zeroboard-based community websites shared can be traced back to Zeroboard's admin page.

3.1. Community as collection of boards

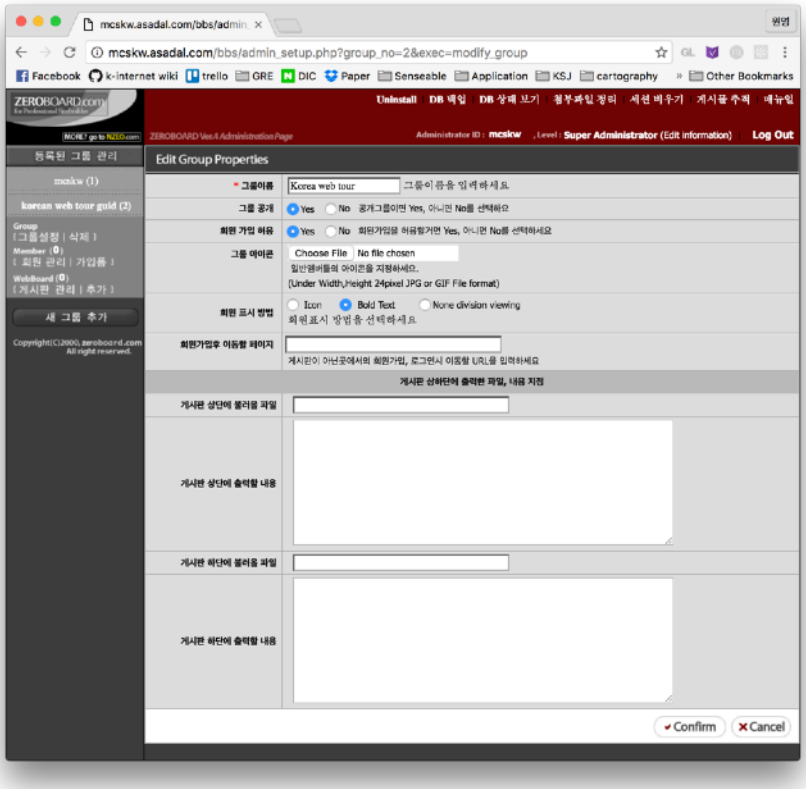

Fig 6. Administration Page of Zeroboard.

A basic structure of Zeroboard that we can find by looking at the admin interface is that the administrator can create a group, and then one can adjust sign-up restrictions and add new boards to this group. In other words, the main function of Zeroboard is to create an environment where members of the same group have access to different boards. This structure is commonly found in Korean community websites, where the typical behavior is to sign up and use multiple boards.

3.2. Signing Up, Level and Resident Registration Number

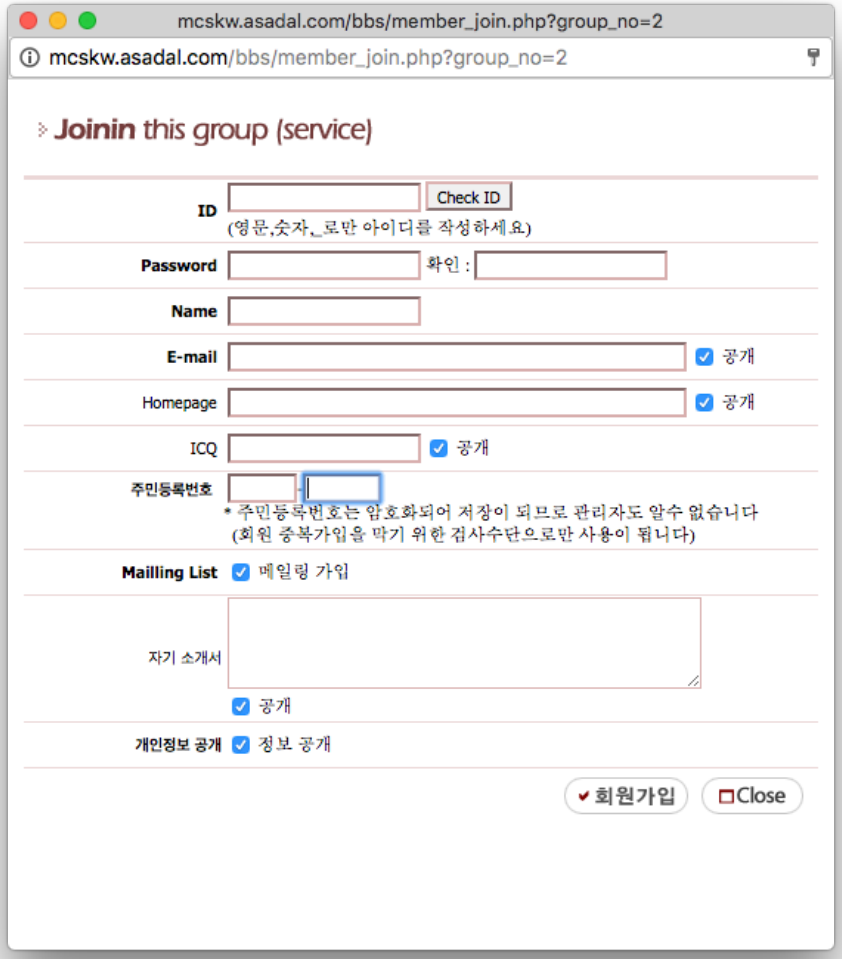

Fig 7. Signing Up Popup: In the middle, it said that Resident Registration Number will be used to avoid duplicate signing up

Early versions of group permission management preferences included the prevention of multiple accounts using the Korean resident registration number. This was used as personal identification number, until a law was passed that prohibited the collection of these numbers. Once members have signed up, they are given level numbers preconfigured by the administrator; the numbers correspond to permission levels. In the admin preferences, different actions such as reading and writing articles, replies and comments, hidden articles, use of HTML tags could be assigned separately to levels 1 to 10. This reflects the administrator's perspective, who has to delicately control the community.

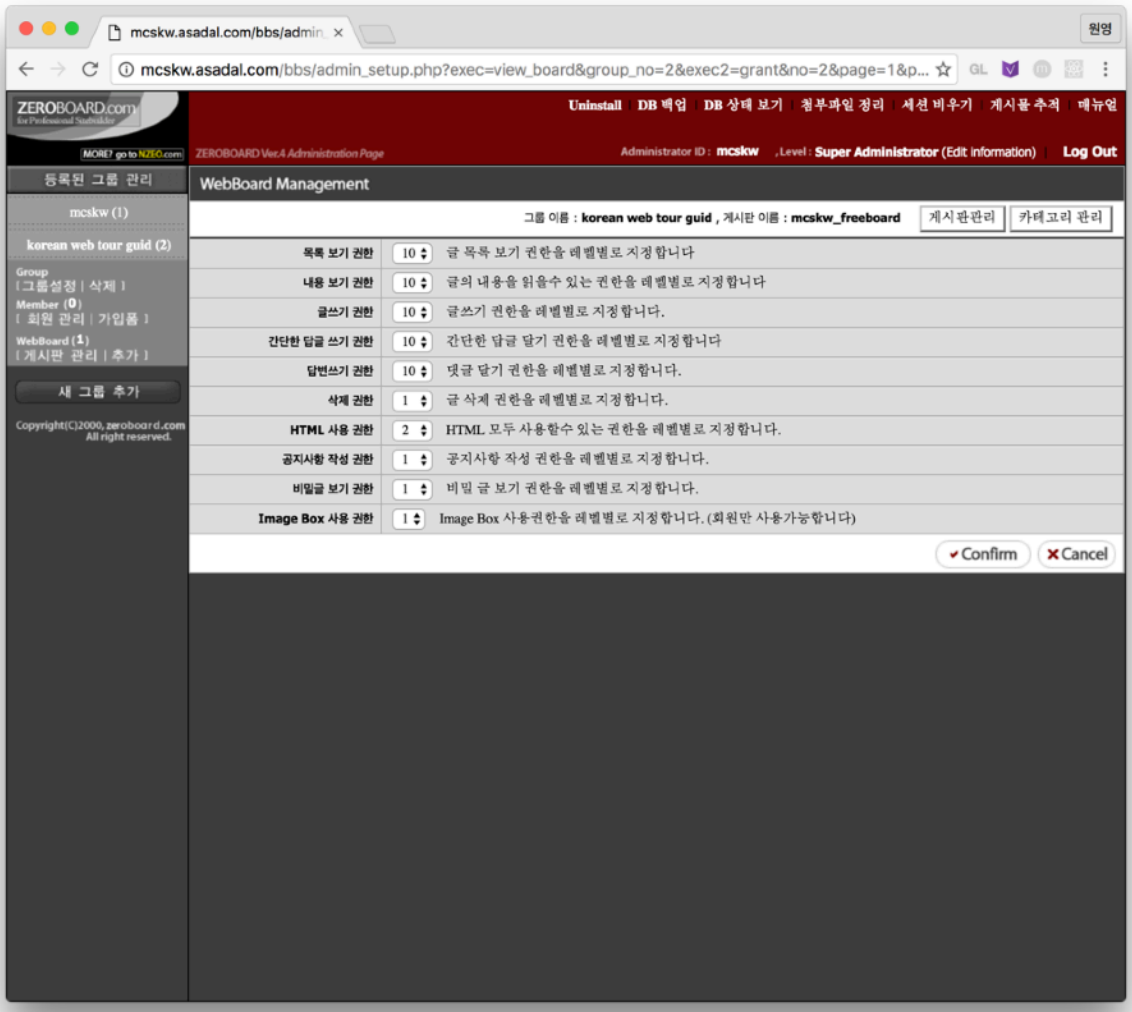

Fig 8. Level Management: it is able to manage the level of use of a bulletin board.

Participation from anyone, in its literal sense, can cause problems to an online community. Minimal restrictions are usually put in place, such as membership, at least to prevent spams. Membership means registering one's unique identification number (this does not mean it is necessarily a number that can identify someone outside the website) in a system, and giving the user certain rights that can be used on the system. In a bulletin board system, the rights refer to DB access permissions; the permissions differ across user levels, from administrator, registered user and unregistered guest. The administrator usually has access to all or most of CRUD—Create/Read/Update/Delete; the user usually has those access to one's own entries while the guest typically has only the right to read, or no access whatsoever.

Some online communities require a certain set of behavior to be performed by the user in order to obtain membership. This can be understood as a sort of gamification. The required behaviors are various; some

communities ask you to introduce yourself, some others want you to create a certain amount of entries or comments. In many cases, the rules encourage the active use of the board. This is at the same time a barrier against unregistered guests, and a quality control device. The required ritual from a to-be member has the effect of filtering out the people who do not want to be part of the community that much; also, the effort put by the users will contribute to one's sense of belonging and affection to that community. Membership control is often done manually; as someone clears the given missions and asks for level adjustment in the "Level-up Board," the administrator verifies the requirements and adjusts the membership in a regular basis, or at one's convenience.

3.3. Article categories

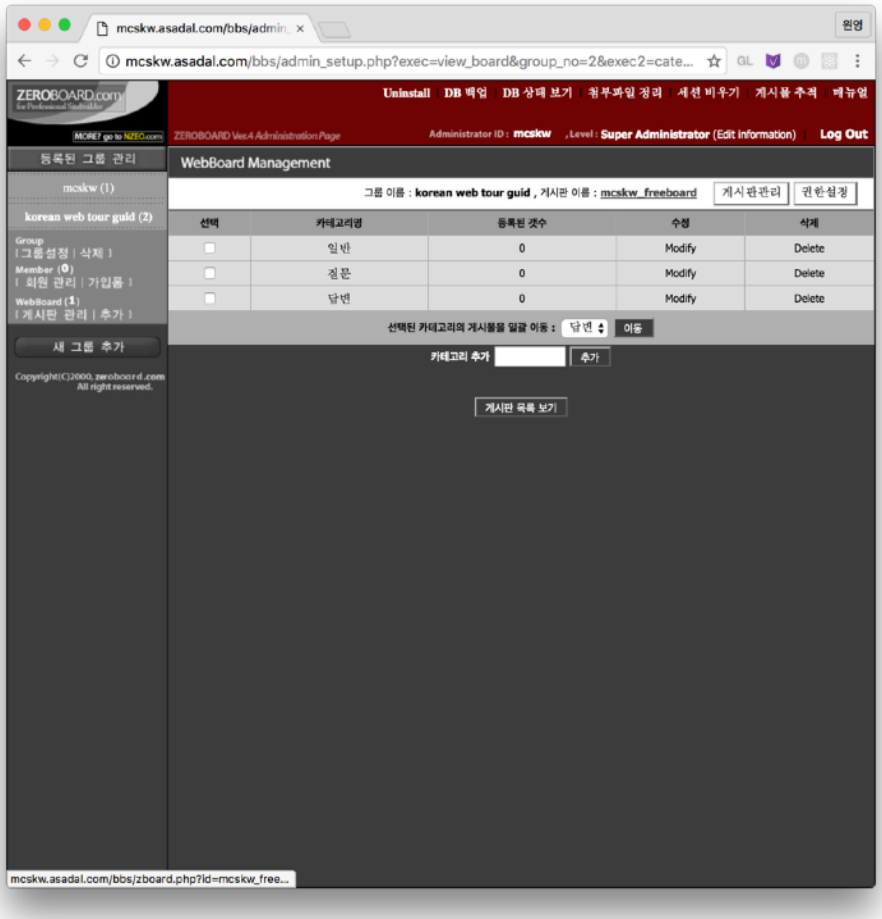

Fig 9. Category Management

Each articles can be assigned categories, which also can be used as filters.

3.4. Recommendation and disapproval

Since Zeroboard 4.1, recommendation became a default feature; this affected some communities' approach to curating articles with high counts of recommendation, such as the Hit Gallery of *dcinside.com*.

3.5. Abusive words

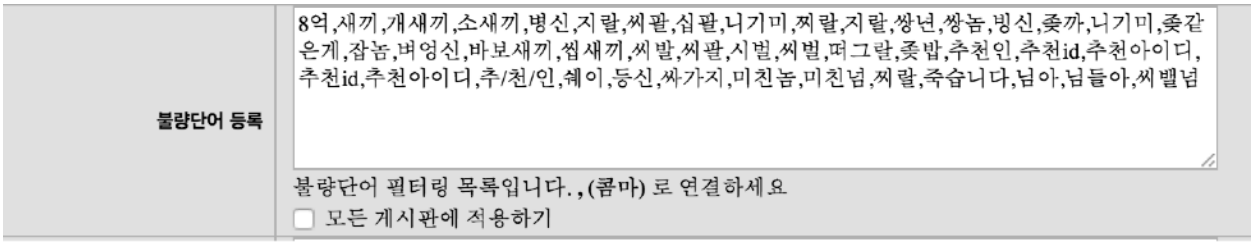

Fig 10. Registering Abusive Words

Most platforms had some version of profanity filtering system, such as in-game chats that converted known curse words to asterisks. Some users started using special characters between letters in order to avoid triggering the filters, which led to the shaping of some online dialects.

3.6. Flooding

Many online communities explicitly prohibit flooding in their code of conduct. Some forbid duplicate posts altogether; some limit them to a few times during a certain a certain amount of time; some do not provide exact figures, but instead warn that duplicate postings can be deleted. In any case, they appeal to the individual user's choice. If someone decides to post duplicate entries or flood a forum, it is the role of the "alba," or the (sometimes hired) administrator/moderator to delete the postings in question. The deletion can also be automated by scripts or done by hand.

In a similar context, what makes flooding possible is the operating mechanism of the bulletin board itself. Zeroboard and similar board systems display newest articles first; one may be able to choose to sort the entries based on hits or recommendations, but this would make it difficult to verify new articles. Whatever article that is posted will go on the main list. Therefore, one is fully capable to flood the board with one's own postings if he or she chooses to—although there might be consequences, like article deletion or IP bans. A bulletin board is a system that relies heavily on the individual action of users and administrators, from the display of articles and their order. Flooding is an exploitation of the primitive rule that decides

articles' order, towards the goal of drawing attention; in that sense, it is closely tied to spam and the excessive use of special characters.

Online communities do not only rely on the user's conscience and the labor of administrators in order to prevent flooding. Some reflect user feedback and some take systemic approaches to improve how they show their content. One direction attempts to remove bad information, by encouraging the reporting of spam or duplicate posts or by automating deletion scripts. Another direction is about exposing good articles more often. Some communities started employing separate boards, displaying recent articles that are chosen based on factors like hits and recommendation. These boards, often bearing the words Best, Hit or Hot, soon became popular since they were collections of popular articles; some of them eventually became separate websites.

3.7. Etc.

Reactions to articles initially included replies and comments, both of which were used. However, the reply function was dropped eventually, possibly because the indentation given to replies affected the website's layout and readability. Since then, the main components of a board became articles and comments. Zeroboard provided an option to either allow or disable comments.

The bulletin board management system and its UI significantly influenced many online community websites and platforms. Zero claimed in an interview that at some point, as much as 30% of the South Korean Internet traffic was generated through Zeroboard[6]; indeed, many platforms frequented by Korean Internet users, constantly posting and commenting, are based on Zeroboard or similar software. This interface, different from the forum interface typical in the U.S. (*Reddit, Quora, Stack Overflow*, etc) and the thread interface that can be found in Japan (*2ch*), has become a characteristic of Korean online communities.

4. Conclusion

Zeroboard has influenced the Korean web for over 15 years. Thanks to the characteristics explained in Easy to Install, resulting in lowered technical barriers, it has played the role as a communication tool essential in the age of personal websites. Also, the interface that Zeroboard standardized is still influential in online communities, as communication methods. By re-contextualizing this software in 2016, when data ownership and agency are more and more threatened, one gains the opportunity to rethink the relationship between the individual and platform provider. Moreover, one proposes a bulletin board

[6] ETNews: http://www.etnews.com/200703190105

interface-centered perspective on the terrain of Korean online communities, and questions what future interfaces should be like. In this sense, the discussion of Zeroboard can help in shaping a critical discussion of the future and possible alternatives.

The Internet is currently becoming centralized. Personal websites, or the concept of an online "home" that persisted in services like *Cyworld*, are things of the past; we are now left with algorithmically generated *Facebook* feeds or *Instagram* photos of people I follow. We don't visit other people anymore. Personal websites are for people like designers who need a portfolio; autonomous blogs are turning into parts of centralized web publishing platforms.

Iranian-Canadian journalist-blogger Hossein Derakhshan criticizes such centralized web culture[7]. He was accused of espionage and imprisoned since 2008 by the Iranian government; he was released in 2014. Six years meant a lot of change in the web; the development of social media especially was different from the blogosphere, to which Derakhshan was familiar to, and perhaps was closer to the ideals of the web. In The Web We Have to Save, he argues that the Stream culture of the new media disables the decentralizing effects of hypertext and hyperlinks, treats the hypertext as a single object like an image or a text, making people more dependent on social media.

"The hyperlink was my currency six years ago. Stemming from the idea of the hypertext, the hyperlink provided a diversity and decentralization that the real world lacked. The hyperlink represented the open, interconnected spirit of the world wide web — a vision that started with its inventor, Tim Berners-Lee. The hyperlink was a way to abandon centralization — all the links, lines and hierarchies — and replace them with something more distributed, a system of nodes and networks... Nearly every social network now treats a link as just the same as it treats any other object — the same as a photo, or a piece of text — instead of seeing it as a way to make that text richer... Hyperlinks are objectified, isolated, stripped of their powers." (Derakhshan, 2015)

A handful of global-scale services contain all of a person's data, messages and appearance; these services save, share and stream the data. Since power and wealth generation through data is now the core of Internet business, individuals have handed over their data to companies which in turn provide Internet services. Now this situation is very natural, but not necessarily in the early days in the web. There is a meaningful environment in which not only the platform as a given service, but also the individual creators themselves make it, and Zeroboard is a good example of this environment. Talking about Zeroboard for

7 Ironically, Derakhshan published this article through the centralized publishing platform Medium; one might see this as a begrudging acknowledgement of where the web is. One of the comments to this article is actually asking the author to publish it in a blog.

now is not for romantic reasons to revive the early ideal land of the web. By describing how individual creators acted in forming the early days of the Internet environment, we could gain a more multifaceted view of actors influencing the present. This view will contribute not only to the publishing platform but also to the imagination of the future of the Internet.

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