Author

Linh Le hopes to pursue a career as a diplomat and feels that his work on this research project has given him tremendous insight into facilitating collaborations between different cultures. He has also enjoyed the opportunity to explore an area of Internet culture that he considers not to have been widely known or researched. Outside of academia, Linh enjoys reading, playing basketball and talking to people on the Internet.

Examining the Rise of Hatsune Miku: The First International Virtual Idol

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Abstract

Virtual idol Hatsune Miku represents a unique phenomenon in the twenty-first century. For fans, this virtual idol represents a new wave of entertainment and engagement. Within academia, Miku represents an opportunity to explore new models for global collaboration. With the proliferation of the Internet, society has had a glimpse of the power that comes from the combined forces of globalization and social media such as Facebook and Twitter. However, in looking at those cases, what we have seen is how real life events facilitate actions in social media. On the other hand, Hatsune Miku provides a case study for the exact opposite: how an event/persona created by social media inspires actions in real life. The goal of this paper is to look at the Hatsune Miku Phenomenon from the perspectives of the fans, the media, the creators, etc., in order to understand how this virtual singer has inspired a new wave of creativity that is changing not only Japan but the entire world, especially in how we understand copyright and engagement.

Key Terms

- Consumer Generated Media (CGM)
- Doujin Culture
- Hatsune Miku
- MikuMikuDance (MMD)
- UTAU
- Vocaloid

Faculty Mentor

This article by Linh K. Le can be considered a "futuristic" piece of thinking and writing. Mr. Le is a Suma Cum Laude, double major and Honor's student in Political Science and Anthropology, with a 3.9 GPA. He is great academically and an excellent researcher. His research incorporates the following: Who and what is "Hatsune Miku?"; Why is her rise in the international computer community important?; and What are the international implications on this technology? While the article itself is of value, Mr. Le goes on to argue that the software known as "Hatsune Miku" allows the community that revolves around this figure the creativity that questions intellectual property ownership. Read and enjoy the work of an undergraduate whose thinking and writing have no limits!

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Introduction

[I]t was the youth of the world who recognized the value of this Japan-made creation long before we Japanese did.—Sakurai Takamasa, Columnist for ASCII and the Yomiuri Shinbum

In 1996, William Gibson, a person whom many today credit with predicting the rise of the Information Age (specifically the concept of cyberspace that is so prevalent in modern life), released a novel named *Idoru*. In his novel, Gibson's character, Rez, wants to marry a virtual personality named Rei Toei, the idoru (a Japanese word for idol) of the story. The concept of a virtual idol that he pioneered would later not only become a reality, but would also be popularized globally early in the twenty-first century with the rise of the first international virtual idol, Hatsune Miku.

While Miku might be the first internationally recognized virtual idol of the twenty-first century, the history of virtual idols can be traced back to Japan in 1996 with the first virtual personality, Kyoko Date, followed subsequently in 1997 with Yuki Terai and many more (Galbraith, 2009). Yet, while these virtual idols and others enjoy widespread success within the anime subculture of Japan, they have never broken into the mainstream. The turning point for virtual idols came between late 2007 and early 2008 with the release of the Hatsune Miku software by Crypton Future Media. Unlike her predecessors, Miku enjoys unprecedented success both domestically and internationally, far beyond that of the anime subculture. For example, kzlivetune's song *Tell Your World*, featuring Hatsune Miku, debuted at number one on Japan's iTunes ranks when it was released on January 19, 2012 (Komatsu, 2012).

The goal of this paper is to understand the success of the Hatsune Miku Phenomenon by looking at the different factors that contributed to the rise of this virtual singer, including technological innovations, marketing and, most importantly, the perspectives of her fans, amateur and professional composers, artists, animators, etc. This paper argues that Hatsune Miku does not fit into the traditional or popular perception of what constitutes a virtual idol (if she/it can be considered one at all). Unlike the popular concept of a virtual idol introduced in *Idoru* and popularized by mainstream media via movies and science fiction, Hatsune Miku functions more as a symbol for a form of large-scale creative collaboration—more commonly known as consumer-generated media—composed of amateur and professional composers, animators, artists, and fans. As a result of this collaborative effort, Hatsune Miku has been transformed from "being looked at as a software program [to] being treated as a legitimate popstar" (Eisenbeis, 2012). By understanding the Hatsune Miku Phenomenon, it is then possible to generate new insight into existing social problems such as copyrights or to encourage cross-cultural collaborations via the Internet. This paper's thesis and findings offer a different perspective than those generally presented by the Western media, which tends to focus more on the virtual nature of Hatsune Miku instead of the creative efforts behind Miku. In order to understand the Hatsune Miku Phenomenon, this paper is divided into five sections:

- The first section of this paper looks at the ideas behind the creation of Hatsune Miku and attempts to answer the question of *what* it is.
- The second section focuses on the innovations that were inspired by Miku and how these innovations contributed to the spread of the Hatsune Miku Phenomenon.
- The third section focuses on the philosophical and inspirational roots of this movement.
- The fourth section examines the role of business companies in the promotion of Hatsune Miku, including goods and concerts and how the Western media reacted to these marketing strategies.
- The fifth section analyzes the different perspectives of the composers and fans through their interviews, in order to reach a conclusion about *who* Hatsune Miku is.

What is Hatsune Miku?

"A Singer in a Box"

Despite popular perception, the story of Hatsune Miku did not start in 2007 when she was first released by Crypton Future Media as a piece of vocal synthesis software, nor did her story begin in Japan. In fact, the concept of a singing computer can be traced back more than half a century. In 1961, three Bell Laboratory employees successfully programmed a mainframe computer to sing the song "Daisy Bell." However, after this experiment, the study of singing synthesis research remained largely unexplored until 2000 when Hideki Kenmochi, a researcher at Pompeu Fabra University in Spain, with funding provided by Yamaha, developed a type of speech synthesis software that would allow home users to create a lifelike, concert-quality voiced "synthesized singer" (Werde, 2003). This software would later be named "Vocaloid" and become the true beginning of the Hatsune Miku Phenomenon.

The concept of Vocaloid is to take any given language and break it down into its phonemes, the smallest phonetic

components of a language. Then, a human singer or voice actor provides voice samples to be stored in a database, a "voice bank." The Vocaloid software allows home users to retrieve these phonemes and rearrange them to form full sentences in accordance with any specific rhythm and melody they chose (Kenmochi and Oshita, 2007). It gives independent composers access to a professional singer without having to hire a human singer at great expense, making it an attractive alternative. In essence, Vocaloid creates an environment that promotes the expansion of "desktop music" (DTM) as it is known in Japan and "computer music" in the United States. Four years after the initial proposal in 2000, Yamaha released the Vocaloid software commercially and, since then, it has gone through three distinctive stages: Vocaloid 1 (V1), Vocaloid 2 (V2), and Vocaloid 3 (V3).

Vocaloid 1
The first two English-capable Vocaloids as well as the first two Vocaloids released globally, Leon and Lola, were created in England by Zero-G Limited. Ed Stratton, the managing director of Zero-G Limited, originally intended for Vocaloids to act as backup vocals for existing singers such as Justin Timberlake or Jay-Z. (Werde, 2003).

In 2004, a few months after Zero-G Limited released Leon and Lola, Crypton Future Media (CFM), a company based in Sapporo, Japan, released the first Vocaloid for the Japanese market, Meiko, followed by her male counterpart, Kaito, in 2006. However, CFM distinguished itself from Zero-G Limited by using a character illustration to add a face to the software. Hiroyuki Itoh, the president of CFM, explained that since Vocaloid is an attempt to mimic the human voice, it should be represented by a picture that resembles a person. Crypton's decision proved to be a success, as Meiko went on to sell 3,000 units, making her a commercial success at the time.[1] In contrast, her male counterpart, Kaito, sold only 500 units (Itoh 2008). The difference in sales between Meiko and Kaito would influence Crypton's decision-making process as Vocaloid entered its second generation.

Vocaloid 2
Vocaloid 2 was released by Yamaha in 2007 and triggered the greatest expansion in the popularity of Vocaloid, both domestically and internationally, until the 2011 release of the next generation of Vocaloid, Vocaloid 3. By looking at the first generation, CFM learned two lessons. The first was that female Vocaloids were vastly more popular than male Vocaloids. The second was the effectiveness of a character

illustration in marketing the product. Crypton understood that by including an illustration but omitting any information other than biographical data, users were free to apply their own interpretation to the character. These two lessons were incorporated as Crypton launched their Character Vocal Series, starting with Hatsune Miku on August 31, 2007 (Itoh 2008). The introduction of Miku would become the catalyst for the rapid expansion of Vocaloids and the creation of many future innovations.

Figure 1
The vocal synthesis software (Vocaloid) Hatsune Miku (Source: About Hatsune Miku | Crypton Future Media. Crypton Future Media. Accessed February 2, 2014. <http://www.crypton.co.jp/miku_eng>)

Innovations

Many innovations were inspired by Vocaloids, such as the projection technology used to put on live concerts, but the two most important often receive little to no academic attention: the freeware 3-D animation software *Miku Miku Dance* (MMD) and *UTAU*, the freeware derivative of Vocaloid.

MikuMikuDance (MMD)
"*Create Everything.*"[2] Innovations that contributed to the Vocaloid phenomenon are many, but none is better known among the fans and Vocaloid producers (often referred to

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1. During this period, if a synthesis software product sold 1,000 units it was considered a success in the industry.

2. This is the motto adopted by MMD users and can be seen repeatedly during MMD competitions.

as Vocaloid-P) than the 3-D animation software, MMD, created by Yu Higuchi in 2008.

Before the introduction of MMD, Vocaloid music videos largely consisted of a series of illustrations to be used in conjunction with a song. At that time, true animated videos required high-end commercial software as well as highly skilled animators. Those two requirements made entry into the animation scene difficult for beginners who often did not possess the funds for the software or the skill to use it. For these amateurs, MMD became their access to the Vocaloid animation scene.

Yu Higuchi originally created MMD simply because he wanted to produce 3-D animation of Miku dancing as an alternative to the standard still images used with most Vocaloid videos at the time. When Crypton relaxed their licensing policy for Miku, allowing her image to be used more freely for noncommercial purposes, Higuchi released MMD as a private-use freeware for the Vocaloid Promotional Video Project (Notofu, 2009).

The success of MMD was almost immediate as user generated videos created through MMD increased to more than 100,000 on video sharing websites such as YouTube and the Japanese equivalent, Nico Nico Douga (NND). Within a span of about five years, MikuMikuDance became the number one animation software in Japan (Akimoto, 2013). Its success prompted the creation of a biannual animation competition known as the MMD Cup. This competition brings together both amateurs and professionals to see who can produce the best animated video. In recent years, the MMD Cup gained enough popularity that magazines were created to track its progress and professionals from major companies joined the ranks of judges. One such example is Sega, which, during the ninth MMD Cup, selected "Rera" by MMD producer RaikuP to receive special recognition (Fairbairn, 2012).

The success of MikuMikuDance is based on a simple formula: it is open-sourced, easy to use, and flexible. By making MMD open-sourced, Yu Higuchi created a larger potential user base for the animation software. In addition, Higuchi gave his creation English language capability which set it apart from other open-sourced software in Japan at the time. MMD required less skill to use than conventional 3DCG software, enabling amateur animators to achieve professional results. Nevertheless, the strongest characteristic of MMD was its flexibility. In the spirit of the MMD motto, users create everything in their video from scratch through collaboration over an ever-expanding network. The

various components that make up a 3-D video—the 3-D models, background, lighting, movement, and so on—are made by different individuals and distributed freely over the Internet. Animators then collect these components and put them together to make an MMD video. As each user tries to improve on previous innovations, MMD continues to grow in quality to the point that even a complete amateur can produce a video that is indistinguishable from that of a professional (Akimoto, 2013). Also, by relying on a network to generate the respective components of each video, MMD is able to expand into genres that are not possible with the Vocaloid software alone. Ultimately, MMD helped spread awareness of Vocaloid into different genres, creating new animators, producers and fans.

UTAU

UTAU was first released in March 2008 by Ameya/Ayame. UTAU possesses many similar functions to Vocaloid, allowing users to take pre-recorded phonemes and string them together to form full sentences. However, while their basic functions remain the same, there are key differences that distinguish UTAU and Vocaloid. The major distinction is that UTAU is freeware while Vocaloid is not, despite its association with the freeware movement. The second distinction is the source of their respective voice banks. Companies behind Vocaloids, like Zero-G or Crypton, tend to choose professional voice actresses or singers to be the source of their voice banks. In the case of Hatsune Miku, her voicebank is that of Saki Fujita. On the other hand, UTAU allows a home user to record their own voice and create their own character to go with that voice to distribute to other users. The combination of a home-user's voice and their character is collectively known as UTAUloid.

Given their similarities and differences, the relationship between UTAU and Vocaloid could be described as cooperative competition. The freeware nature of UTAU allows it to act as an inexpensive alternative to Vocaloid, enabling it to expand to a larger user base. In addition, by allowing home users to record their voice to be used in conjunction with UTAU, the software offers more voice bank variations than Vocaloid. However, while UTAU offers users a wide range of variations and more flexibility, it cannot compete with Vocaloid in the quality of the individual voice banks. These differences are important because they create three distinct groups of home users. The first group prefers UTAU over Vocaloids because UTAU stays closer to the consumer-generated media movement. The second group, the larger of the two, prefers Vocaloid over UTAU due to the fact that Vocaloid sounds less robotic. However, the robotic nature of UTAU has been decreasing over the years

due to improvements in the software, which has resulted in a changing dynamic between these two groups.

Outside of the two aforementioned groups there exists a third group, the largest and most diverse, whose members try to foster cooperation between UTAU users and Vocaloid users. Their efforts to promote cooperation occur in one of three ways: use of both UTAU and Vocaloid instead of exclusively using one or the other, incorporating UTAU into a Vocaloid song, or promoting popular UTAU characters alongside popular Vocaloid characters. An example of the first method is the Vocaloid producer samfree who uses the UTAU Mitani Nana in his song *Nana Nana★Fever Miracle Tonight* as part of his *Night* series. The second method was used by the producer OneRoom, who turned his own voice into the UTAU Zimi Samune and had it sing alongside the Vocaloids in his song *Reboot*. The last method is best exemplified by the UTAU Kasane Teto (Figure 2), who started as an April Fools' joke but now enjoys widespread popularity on par with most Vocaloids (Descent87, 2011).

Figure 2

The UTAU Kasane Teto (Source: Kasane Teto official site. 2010. Twindrill. Accessed February 2, 2014. <http://kasaneteto.jp/en/illustration.html>)

The competitive cooperative nature of both UTAU and Vocaloid helps foster an environment where producers compete to produce ever-higher quality songs using each of the software packages. Nevertheless, in the midst of this competition, the creative environment has managed to allow for cooperation such that both Vocaloid and UTAU

are locked in what is essentially a positive feedback loop. New users can opt for the freeware UTAU as a way of getting started and then move to Vocaloid once they are familiar enough with the basic mechanics. More experienced users can move from Vocaloid back to UTAU when they want more variation in their songs. Together, both UTAU and Vocaloid help expand the creative culture that lies at the core of the Hatsune Miku Phenomenon.

The Importance of Doujin Culture

Since her "birthday" in 2007, Hatsune Miku's popularity has been largely unchallenged despite other Vocaloids having been introduced into the market. WakamuraP, one of the most renowned Vocaloid music video producers, commented that:

> Miku is so popular that she has become the face of Vocaloid, and the future of the scene depends on her—she's like 'Miss Universe Vocaloid.' Because of that, she has a sort of responsibility for the scene. Her popularity in a way determines the popularity of the scene, and the future it will take. (WakamuraP, 2013)

Ian Condry, a professor from the Massachusetts Institute of Technology, offers an explanation for the rise in popularity of Hatsune Miku. He states "[She] was the first to cross the threshold of quality voicing, the first to be presented as a character with a look. Like all popular culture, things are popular because they are popular, so Miku had a first-mover advantage" (Kelts, 2012).

While the first-mover advantage concept can be seen to explain the rise of Miku, it does not explain her sustained popularity. If Miku's popularity, and by extension Vocaloid's popularity, is dependent on her novelty as a virtual diva, then there should be a steady decrease over time. Instead, survey data reveals the opposite. According to a 2013 survey conducted in Japan by the Tokyo Polytechnic University, Hatsune Miku has name recognition among 95% of all survey respondents. This number is a 30% increase from a 2010 survey conducted by Yamaha which showed that 60% of respondents were familiar with Miku (Tokyo Polytechnic University, 2013). This result reveals that Miku's sustained popularity is not derived from her status as a virtual diva, but rather from a different source.

In many ways, the success of the Hatsune Miku Phenomenon could be linked together with the success/importance of doujin culture in Japan. The word "doujin" can simply be

defined as self-published works that can be either original or derivative works in fields including literature, comics, software, and music (Leavitt and Horbinski 1.3–1.4). For Japanese pop culture, specifically for the manga and anime industries, doujin activities constitute an integral part. Large-scale doujin events like NatsuComi (Summer Comic Market), draw approximately half a million participants every year (Lamerichs 159–160).

Doujin culture is unique because it is a culture that is made entirely by fans for fans. It is an event where every work of art, especially derivative works, is considered unique and treated as a collector's item instead of an imitation or copy (Lamerichs 159). Nevertheless, due to the fact that many industry professionals originated from these comic markets, doujin culture holds tremendous influence over the manga and anime industry as it dictates which trends become popular and which do not. Due to the tremendous influence of doujin culture, Japanese companies tend to take a more relaxed approached to copyright protections, allowing fans to make derivative works of their anime or manga as a way to increase the value of their brand.

From Doujin to Vocaloid
At its core, the underlying concepts behind Vocaloid mirror those that already exist in doujin culture. A few examples include peer-to-peer sharing and the freedom to create both original and derivative works without fear of copyright. Professor Kuhara Yasuo from Tokyo Polytechnic University commented that, "Unlike restrictive content tied up by rights [e.g., copyright], this environment is friendly to viewers and to creators who can freely participate in the creation of derivative works, and creations get reused" (Tokyo Polytechnic University 4).

In a study titled "Social Networks of an Emergent Massively Collaborative Creation Community" Masahiro Hamasaki and Hideaki Takeda illustrate how the Vocaloid operates. The study outlined two features that distinguish Vocaloid from its doujin roots. The first is "massive collaboration," which involves thousands of people who might or might not know one another. The second feature is "creating content collaboratively," which they noted that individuals must do more than simply share contents; they must interact collaboratively to generate new content (Hamasaki & Takeda 4-6). These two ideas are neatly summarized by Eiji Hirasawa, whom many today see as the first person to write a song for Hatsune Miku, when he explains in an interview:

> Thanks to the internet environment that was highly developed in these years, if someone creates and

posts a song in a website, others can instantly react to it by creating illustrations. Moreover, someone who has knowledge of 3D or 2D animation can move those illustrations. That way, things link together rapidly and a place to introduce their own work already exists, and everybody gives a response to those works. Such a form of [connectivity] has never existed before. (Hirasawa, 2013)

The Commercialization of Hatsune Miku

Doujin culture not only provided the infrastructure that operates as the basis for the creative environment of Vocaloid, but it also laid the foundation for the interaction between that creative environment and third-party businesses. Nicolle Lamerich describes the relationship between businesses and the doujin community as one resembling a "gift economy" which consists of two parts. The first part occurs during conventions where a series of exchanges happen between the fan artists and the fans during which fan artists rarely generate a profit. The second part of this gift economy has to do with third-party businesses taking the products that were made for that convention and commercializing them for profit (Lamerich 160).

For the doujin community, third-party businesses play two important roles: historian and gatekeeper. By allowing a third party to commercialize doujin products, the doujin community acquires a method for preserving their work for future generations, the historian role. Commercialization also has the benefit of distribution, allowing doujin material to spread farther and become a part of the larger culture instead of existing solely in its respective sphere of influence. In this sense, third-party businesses function as a gatekeeper that controls the exchanges between doujin culture and mainstream culture.

Like all economies, this form of gift economy also has its own "code of conduct," of which the most important element is the preservation of the original material by third-party businesses. What this means is that third-party companies cannot reinterpret the products that they commercialize. Instead, they have to adhere to an informal "operating guideline" created by the doujin community for that specific product. Vocaloid takes this concept and refines it further by incorporating these businesses directly into its operating structure and not just as a third-party. This complex relationship can be illustrated through two examples: Toyota and Sega.

Toyota

In 2011, Toyota officially introduced Hatsune Miku to the Western market by using her as a mascot to sell its 2011 Toyota Corolla in a campaign targeting Asian American youth. Toyota's campaign included a remake of their website to feature the virtual singer, a series of commercials, a concert featuring Hatsune Miku at Anime Expo in Los Angeles and an iPhone app (Toyota, 2011). From one perspective, Toyota's strategy was a success earning them the Multicultural Excellence Award at the Association of National Advertisers' annual Multicultural Marketing & Diversity Conference; however, in the overall picture, the effectiveness of Toyota's marketing strategy was more uncertain. The largest problem for Toyota is that during their campaign effort, they isolated the demographic they were targeting by failing to understand the operating guidelines that were created within the Vocaloid community.

Toyota's initial mistake was evident in the negative reaction they received when they "Americanized" Miku (Figure 3) for the Western market (Lanson, 2011). Their second, and arguably worse mistake, was their attempt to alter the source material, by replacing Miku's signature item, a leek, with a more Americanized bacon wrapped hotdog, a move that went against their assigned third-party role as historian (Lanson, 2011).
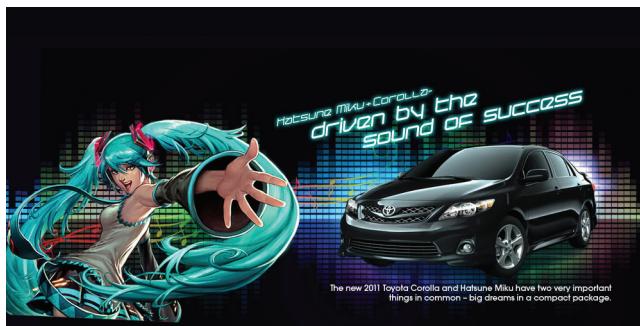
Figure 3

Toyota's original design for Hatsune Miku until fan backlash forced Toyota to alter the design. (Source: Lanson, Greg. "Toyota USA's Hatsune Miku Evolves Yet Again." Crunchyroll.com. Crunchyroll, 24 June 2011. Web. 29 June 2013.)

Toyota's campaign reveals two important points that highlight the relationship between the Vocaloid community and third-party businesses. The first is that while Vocaloid champions free creation, allowing an individual artist to interpret Hatsune Miku however he or she sees fit, it also includes a few informal stipulations that limit how far from the original a derivative creation might go. These informal standards are broad enough to allow for individual creative

interpretations of Hatsune Miku while establishing general physical characteristics that would allow a person to recognize Miku. Toyota's design ignored these limits and was rejected by the fans as a result.
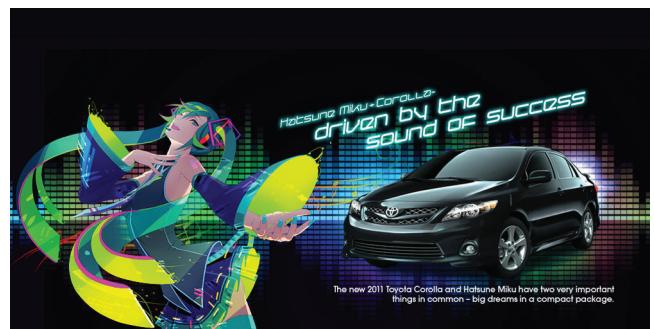
Figure 4

Toyota's second design for Hatsune Miku (Source: Lanson, Greg. "Toyota USA's Hatsune Miku Evolves Yet Again." Crunchyroll.com. Crunchyroll, 24 June 2011. Web. 29 June 2013.)

The second mistake of Toyota is important because, as a third-party business, it did not fulfill its primary goal of historian. Within the Vocaloid community, the leek is a unique symbol, not because of what it is but rather because of how it got there. For a fan of Miku, the leek is a signature item so widely popularized that it appears in almost every illustration alongside Miku. This leek first appeared in a video called "Loituma Girl" featuring an animated character spinning a green onion to a Finnish folk song called Ievan Polkka. The video was remade using a deformed version of Hatsune Miku, now called Hachune Miku, with Miku singing Ievan Polkka in the background. Subsequent to this version, the leek became widely associated with Hatsune Miku. In other words, the leek became a cultural symbol specifically associated with Miku within the Vocaloid community. Toyota's mistake was that it tried to replace this symbol, one that was largely agreed upon by members of the community, with a symbol that it invented.

SEGA

In contrast to Toyota, SEGA, a game company most known for their Sonic the Hedgehog games, succeeded in their marketing by adhering to their assigned role. The best example of this is the Project Diva games and the now famous "hologram" concerts.

Project Diva is a series of rhythm games featuring the singer, Hatsune Miku, and other Vocaloids. What distinguishes Project Diva from other games on the market is that the crux of the game, the music and the illustrations, is crowdsourced. All the songs found in Project Diva were made, not by SEGA, but by members of the Vocaloid communi-

ty. These songs were evaluated, criticized, and popularized within the community before Sega gathered them into their games. The success of Sega's strategy was evident when Sega released Project Diva F, the next game in the Project Diva series in 2012. Almost immediately the game became the most popular game in the Japanese market, selling well over 150,000 copies in its first week as well as boosting its sales of its console, the Playstation Vita, by 500% (Nunneley, 2012).

Figure 5

Sega's effort at polling fans for the localization of the Project Diva series in the West (Source: Sega - Timeline Photo. 2013. Sega. Accessed February 21, 2014. < https://scontent-b-lax.xx.fb-cdn.net/hphotos frc3/t1/481064_1015 1538674841796_1237817730_n.jpg>)

As popular as Project Diva is, SEGA's best known success outside of the Vocaloid community has always been its "live" concerts. These live concerts fulfill two important functions outside and inside of Vocaloid, which have resulted in Miku being seen in two very different ways. The outside function is to act as a promotion tool for the Hatsune Miku Phenomenon. Due to the "holographic" nature of these concerts, Miku became known as a virtual popstar in the West, primarily due to the Western media reporting on the concerts with little prior knowledge of Vocaloids (Meyers, 2012). Internally, these concerts are a form of social gathering, rather than actual concerts. Their crowd-sourced nature makes a Vocaloid concert a uniquely different experience from a traditional concert. When these songs are performed on stage, fans feel as if they are celebrating the success of someone they see as being one of them. In this perspective, Miku is not so much a virtual pop-star but rather a symbol of the collective efforts that culminated in a concert-style celebration.

Combating Piracy

One of the major concerns the music industry has faced in recent years is the problem of piracy. Piracy has been especially difficult to prevent due to faster and larger distribution channels made available by the accessibility of the Internet. The standard response to piracy is increasing the amount of legislation to discourage and punish those who violate anti-piracy laws, a top down approach to solving this problem. An example of this approach occurred in 2012 when a woman was fined $220,000 dollars for illegally downloading 24 songs (Holpuch, 2012). In contrast to the music industry's approach, Vocaloid has taken a bottom-up approach in dealing with piracy, relying not on governmental legislation, but on establishing social norms that reject the illegal download of music.

Vocaloid's two-pronged strategy for combating piracy was inspired by the doujin community, with a few adaptations made to accommodate its global audience. The first stage of this strategy is to build a personal relationship between the producers and the fans. Many Vocaloid producers see their works as an extension of themselves. For example, PeperonP who said, "I felt that I couldn't break my limit [for] expressing my soul when I only perform someone else's music. Composing a [song] gives me a chance to 'express MY OWN world'" (PeperonP, 2013). The highly personal nature of Vocaloid music allows composers and fans to establish strong social ties, despite having never met in real life.

The second prong of Vocaloid's anti-piracy plan is making the majority of its music free for download. Interestingly, the consequence of this decision is counterintuitive, with fans purchasing more Vocaloid music not less. Even in China, where piracy runs rampant, the latest CD of a Vocaloid producer, Supercell, received "a rush of pre-orders" (KarbyP, 2012). The reason for this behavior by Vocaloid fans is the connection that they feel with their favorite Vocaloid producer. This social connection between fans and producers creates an incentive structure where fans will purchase CDs, not necessarily for the music—because it is already free—but rather to show their support for Vocaloid producers, who they see as part of their community. The unique incentive structure employed by the Vocaloid Phenomenon helps ensure the sustainability of its creative economy as it continues to expand.

Who is Hatsune Miku vs. *Who* is Hatsune Miku?

Who is Hatsune Miku?
While it is important academically to define the subject of interest in a research paper, with respect to Hatsune Miku, any attempt to define her is met with two major obstacles, technical and moral. The technical problems are twofold. First, this question assumes that Hatsune Miku is a living, breathing entity with definitive characteristics that can be

used to describe a regular person. As any reasonable person will point out, and as Hiroyuki Itoh put it, "She doesn't exist, never has" (Kelts, 2012). The second technical problem is that the question is insufficient. The most fundamental characteristic of the Vocaloid Phenomenon is that it puts the power of interpretation in the hands of the fans, making each different interpretation equally valid. In other words, if there are one hundred fans, there are one hundred different interpretations of Miku. Professor Tara Knight from the University of California, San Diego, illustrates this point in her documentary, *Mikumentary*, where the descriptions of Miku by her fans include "goddess," "angel," "Vocaloid," "virtual idol," and so on (Knight, 2012).

This freedom of interpretation also leads to the moral dilemma in trying to define Miku. This dilemma is best exemplified by the question "Is there a need to categorize this virtual idol?" If one strength of the Hatsune Miku Phenomenon is its versatility, then a definition made within an academic context would become the framework upon which future fans and artists would see this virtual idol, undermining the phenomenon as a whole. Therefore, it is necessary to bypass the question of "Who is Hatsune Miku" and instead ask "*Who* is Hatsune Miku."

Who *is Hatsune Miku?*

Despite being identical in appearance, there is a clear distinction between these two questions. The first question emphasizes Miku herself as a distinct entity while the second question emphasizes the individuals behind Miku, those who contributed and others who are still contributing to the growth of the Hatsune Miku Phenomenon. The question of "*Who* is Hatsune Miku" highlights an important point that is often overlooked, the shift in focus from singers to producers. In an interview with Yamaha, Dixie Flatline, a highly respected Vocaloid producer, explained his decision to use Vocaloids. He states that "most people know who sings which song, rather than who composes it. However, in Vocaloid music field, songs are known as who made it" (Dixie Flatline, 2012).

Vocaloid producers, instead of keeping with the formula for mainstream music, often end up taking the opposite route, creating songs about any topic they like ranging from serious topics like life and death to silly topics such as wanting to eat fish or being a cat. By looking at Miku from this perspective, Miku looks less like the virtual diva painted by William Gibson's *Idoru*, and more like a mirror that reflects the life of the person that is using her at that moment. There is no one single Miku because, as one writer puts it, "A Vocaloid is not a static character, with a given story

and a fixed set of attributes, as in the case of many classic characters, such as those in manga or anime. A Vocaloid is in fact a process" (Târcă, 2013).

Conclusion

[T]here is a bustling creative ecosystem run almost entirely by the fans. Ultimately, that may be Crypton's greatest gift to the world: not Hatsune Miku or the Vocaloid software itself, but the way in which it is used. An entire form of entertainment has been built not by corporate overlords, but by its consumers (Santos, 2011).

The rise of Hatsune Miku is not the apocalyptic vision of robots or virtual singers replacing humans that many in the media seem ready to adopt. By analyzing this phenomenon from the perspective of the fans of Hatsune Miku, we can see an entirely different picture. These fans managed to create what looks to be impossible, a compromise between creativity and intellectual property, between preventing piracy and promoting creative endeavors. The appeal of Hatsune Miku is summarized by Ian Condry when he writes:

Miku reinforces some of the lessons for civic media that we've heard before: people need to feel a genuine openness to participate; sharing and dialogue are key to building a community; free culture is more generative than controlled-IP systems (Condry, 2011).

The Hatsune Miku Phenomenon, specifically the processes that contributed to the rise of this virtual idol illustrate several important points. It calls into question the long standing approach by the U.S. to its piracy / intellectual property debate. It presents a different solution to the standard top-down, carrot-and-stick dual paradigm that many proposed "solutions" seem ready to adopt. Miku presents a third path, one that is neither "stick" nor "carrot, one that is managed by the very consumers that created it, and one that strikes a balance in the relationship between consumer and corporations. If anything, the Hatsune Miku Phenomenon demonstrates that a bottom-up, grass-root approach toward protecting intellectual property while promoting individual creativity is one worthy of consideration.

Acknowledgements

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