**The Sum Technical Paper**
(Technical Paper)

**Gacha Games As a Safe Form of Entertainment**
(STS Paper)

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David Xue
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Technical Project Team Members
Peter Felland
Mia Hampford
Nuzaba Nuzhat
Sam Shankman
Connor Yager
Carl Zhang
William Zheng

On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

Signature David Xue Date 11/21/19
David Xue

Approved Ahmed Ibrahim Date 11/22/19
Ahmed Ibrahim, Department of Computer Science

Approved Date 11/20/19
Thomas Seabrook, Department of Engineering and Society

## Introduction

Gacha games are one of the many new forms of entertainment that technology has been revitalized through recent inclusions in major games around the world, but many people disagree with this form of entertainment and want to put laws that restrict it. I recently worked with TheSum, a company that focuses on helping people live together by letting people recognize, accept, and celebrate differences because of my interest in their process of doing so. Using my experience working with them, I became interested in how this could apply to how people view certain types of entertainment like Gacha games.

Gacha games originate in Japan as Capsule machines that dispensed plastic capsules that contained a collectable item that both kids and adults could collect (Famularo, 2017). The term Gacha originates from the word Gachapon, a name these Capsules machines took on from the sound of when the machines dispensed a capsule (Famularo, 2017). Gacha games are games that utilize a gacha like system in their game combined with other gaming elements to form a game. The main purpose of having a gacha like aspect is to help developers make money from the game as an alternative to a subscription or one time fee (Heinze, 2017). Gacha games themselves have already proven that they can make money with top gacha games making millions every month (Teraoka, 2019). However people are concerned that such a game aspect can be predatory (Porata, 2019). There are other concerns that adding a gacha aspect to games could lead users to have symptoms similar to compulsive gambling. As a result, some lawmakers have already enforced laws regulating and even banning the use of gacha in certain popular games (Nordmark, 2018).

The problem I am interested in exploring is determining if gacha games are a good form of entertainment by looking at people's perception, the types of users, and user health. I think this important because companies are incorporating gacha-like aspects into their games due to the known financial success of the gacha model. Should we as a society let gacha games persist as a form of entertainment? Can we create a device to help discover people's perception of gacha games?

## Technical Topic (Capstone)

The Sum, led by Elliott Cisneros, is a Charlottesville, Virginia non-profit partnered with the Heather Heyer Foundation which promotes personal growth, skill development, and diversity. The goal of the The Sum is to stand in solidarity with all people, no matter their background. The Sum offers a Power of Difference Assessment (PDA). The PDA gathers participants' demographics and asks a series of demographic-based questions. After taking the PDA, a report with results is generated and emailed to the participant. The results are categorized across demographics, areas of strength, and areas of growth. The results help reveal people's demographic biases. Those that take the PDA can meet with a consultant from The Sum to learn about their biases and how to communicate better across demographics. There are paid, free, and organizational versions of the PDA with the only difference being the length of the consultation received ("The Sum", n.d.).

The Sum already has an online PDA system in place. The current system allows users to take the PDA and schedule a consultation. However, the system is error-prone. The system improperly categorizes results and it requires someone at The Sum to manually generate reports

and email them to users. As part of report generation, categorizations are manually checked and corrected. This makes report generation time consuming and prone to human error. Although manually generating a report only takes a few minutes, the time from PDA completion to reports being emailed to users varies based upon availability at The Sum and can take up to 24 hours. This methodology is not scalable and cannot support the upcoming UVA Department of Psychology study of 1,000 PDA takers. In addition to this, the current system does not detect a difference between assessment versions. It is also insecure and allows for URL manipulation.

The goal of this capstone project is to make a new PDA system. The new system should include all the features of the current system. The new system should correctly categorize results, generate reports, email reports to users, and detect which version of the PDA is being taken. For organizational and paid versions of the PDA, the new system should handle organizational access and payments correctly. The new system should also have security checks in place to prevent revisiting previously answered questions and URL manipulation.

In order to make the new system, requirements had to be gathered from The Sum. Requirements determine what features should be part of the new system and which features should be prioritized. Feature prioritization impacts the development timeline. Requirements help track development progress. Separating the work into requirements allows the team to determine who works on which features. Most importantly, requirements establish clarity between the capstone project team and The Sum for what is to be built.

Minimum requirements are to make a system where users can sign up with a valid email address, undergo email verification, select which version of the assessment to take, fill out user demographics, answer each question of the PDA, only view one question at a time, only answer

questions in order, and have access to the separate consultant scheduling system. Users cannot change responses to previously answered questions. For the minimum requirements, assessment versions do not have to differ and The Sum should have administrator access to the system so they can view results, generate reports, and email reports to users.

Desired requirements include having the system correctly categorize results, generate reports, and email the reports to users and The Sum. Desired requirements also include implementing the paid and organizational versions of the PDA, moving the system to the cloud for scalability, and enhancing the systems administrator experience for The Sum.
Optional requirements include integrating the consultant scheduling system with the PDA system, supporting mobile devices, supporting changing the PDA questions, letting The Sum give consultants permissions to view specific user's results within the system, and allows organizations to view the results for their members who have taken the PDA.

## STS Topic

To analyze the question from an STS perspective, I will approach the problem from a social construction of technology (SCOT) approach and its criticisms,

SCOT says that technology does not determine human action, but rather human action determines technology. Leading SCOT advocate Wiebe Bijeker and Trevor Pinch say there are four main components to this theory:  interpretive flexibility, relevant social groups, closure, and wider context (Bijeker & Pinch, 1987). Interpretive flexibility means that different people sees the same technology in different ways (Bijeker & Pinch, 1987. For gacha games it would be like a way to enjoy your free time while to others it just people wasting their time on their phone.

Relevant social groups for gacha games would be the users of the system, the developers, and the lawmakers, anyone that has to do with gacha games. Closure is the collapse of flexibility. Gacha games are lacking in flexibility due to the notion of being fixed because of advertisement. The wider context is the culture of which development takes place. The wider context of gacha games is being developed in a time where many physical things has become digital and government laws have not completely adapted to fit this new digital technology.

Langdon Winner, a professor at Rensselaer Polytechnic Institute, criticizes SCOT in four different ways (Winner, 1993). The first way is SCOT ignores the consequences of making a technological choice (Winner, 1993). This includes the consequences of society accepting gacha games as a safe form of entertainment. An example would be encouraging similar genres of entertainment like gambling due to its resemblance to Gacha Gaming. Another point of contention is that SCOT promotes conservatism and elitism by not including those who are not directly related (Winner, 1993). This includes the friends and families of people who play Gacha games. A third point is SCOT does not look at deeper cultural, intellectual, or economic choices that affect social choices (Winner, 1993). This includes ignoring the effects of the gambling regulation on people's choice regarding gacha games. The final point of criticism is that SCOT doesn't offer any real substance on how technology should be placed in human affairs (Winner, 1993). This is SCOT saying that people look at gacha games in different ways, but not offering any argument for or against it in Society.

The main stakeholders identified for my problem are the game developers, lawmakers, and users of gacha games according to SCOT. The game developers are the people who design and create gacha games. Users are the people who invest time and potentially money into playing

a Gacha Game. Lawmakers are the people who have the ability to influence the rest of society based on the laws they make. Additional stakeholders from the criticism are family members and friends who are not any of the main stakeholders, but have a close relationship with one.

The artifacts identified for my problems are gacha games and the technological devices they are hosted on. Gacha games are the medium of entertainment a user may use to relax as well as the platform where game developers earn money. Technological devices for the focus of this article will mainly be smartphones that perform a variety of tasks from communication to entertainment.

## Research Question and Methods

To analyze whether gacha games are a safe form of entertainment I will be evaluating:

- the primary marketing strategy for a gacha game.
- known user hazards from the platform surrounding it.
- user and gacha game statistics.
- the opinions of countries and authoritative figures.

There are papers written on the most effective way of running a gacha game already published (Kaneko, Yada, Ihara, Odagiri, 2018; Brown, 2019). I plan to go through these papers and see if marketing could have any hazards. For known user hazard, this mainly focuses on things surround gacha games like its primary platform the phone (Han, 2017). There are many tools to get data on specific gacha games and their users such as their revenue and usage time respectively (Google, 2019; Teraoka, 2019). For the opinions of countries, many opinions can be found from whether they've considered issuing a law against it (Nordmark, 2018). As for

authoritative individuals, I plan to read papers by professors who have studied the subject and stated their opinions (Macey, 2019; Zendel, 2020).

## Conclusion

By creating an assessment that safely evaluates people recognize differences and analyzing how people view entertainment such as gacha games, I can analyze further if gacha games can be a safe form of entertainment. The assessment will allow me to study if people have some innate bias towards certain games that influence their opinions. The STS prospective gives an understanding on how gacha games form and the affected groups and consequences of certain actions. The outcome of developing such an assessment will cause other people to develop assessments to evaluate other biases. The outcome of the STS research will potentially give rise to question why we think other forms of entertainment are safe. I hope lawmakers can take in consideration that their decision with gacha games may have a domino effect on how we evaluate other renewed forms of entertainment.

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