

Play or Work?: Generativity in Online Games

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Abstract

The digital multi-sided platform has led the growth of industries. Accelerating this growth, generativity allowed innovation based on boundary-less modularity. Online games are a rich source of research but most of the research is dedicated in examining only the online game itself. However, there is a growing need to understand online games in an ecosystem level for a new phase of evolution is starting based on generativity. With generativity, online game users now make new graphics and quest that can be added and shared to the already existing game environment. The ecosystem is moving towards finding an amicable multi-sided distribution platform for these user generated game contents. Preliminary data suggest the possibility of actual connection between generativity and users' game engagement. Interviews and surveys will be prepared to find out the details of the possible relationship and how the ecosystem will shape accordingly.

Keywords] Digital Multi-Sided Platform, Online Game, Ecosystem, Generativity

1. Introduction

The Digital Multi-Sided Platform (hereafter DMSP) is a digital network platform on which entities transact, collaborate, and render new value. Most research in this field is concentrated on applying this concept to commerce(Tan et al., 2016; Tan et al.,2015), entertainment(Chatfield et al., 2015), and business(Seamans & Zhu(2014); Evans & Schmalensee, 2010). Although not acknowledged sufficiently, online games are also heavily affected by the DMSP(Figure 1.). Appearing in a form of communities, both the game users and providers actively participate on the platform. The platform functions to generate new ideas for updates and allows user engagement that satisfies internal needs such as the need to fulfill autonomy and competence(Yee, 2006; Ryan et al.,2006). However, the level of user participation is limited due to the limited accessible source. Because most online games block users from accessing code-level data, actualizing ideas are solely up to game providers. The participation of users generally is limited to

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idea presentation and hoping that the provider would pick their idea to build. As a result, most DMSPs for online games remain at a community level and have not been developed to take other forms.

However, surprisingly, some of the games have leaped ahead in providing generativity to users. The resulting product of generativity is called MODs, referring to “modules.” Users can create a MOD and post it on the DMSP they use so other users may also apply it to their games. Something new can be created by adding a MOD to MODs or modifying the existing MODs. On the extreme end, The Sims produced by EA, Elder Scrolls: Skyrim by Bethesda Software, Minecraft by Microsoft, and Steam Workshop operated by STEAM provides toolkits, tutorials, forums, MOD archives, etc., all in their official DMSP, actualizing and maximizing the function of generativity and the communication level on the DMSP. In the case of Elder Scrolls: Skyrim, the official portal alone provides 8,796 (as of April 30, 2017) different MODs created by users and is growing every day. These MODs range from altering simple game graphics to designing new quests and scenarios and fixing bugs. Bethesda Software also provides short interviews with MOD makers which reveals that the MOD makers reflect their personal experiences and ideas within the game and that they find MOD creating another source of entertainment, apart from playing the game itself. In addition to the official supported MOD archives, there are also a number of forums and webpages dedicated to providing and developing MODs for many different games.

So far, research on online games has focused on finding the motive of adaptation(Choi, & Kim, 2004; Hsu, & Lu, 2004) and observing human reaction to catastrophic events which cannot be easily seen in reality(Lofgren, & Fefferman, 2007; Kang et al., 2017). To the best of our knowledge, not much literature has been dedicated to studying the game from outside the game perspective, despite the rich potential of new research. The function of DMSP and generativity is increasing, leading to a growing need to better understand the relationship between these factors. Therefore, in this research, we aim to discover how generativity has changed the currently existing format of user engagement and DMSP by answering the following questions in the context of online games.

How will the DMSP evolve to meet the requirements of this new concept?

Will generativity affect user engagement level and the life span of playing games?

We used an online game, Elder Scrolls: Skyrim, and its series, which allows users to actually build game components (MODs) and release it through the official DMSP (high generativity). We also referenced an online game serviced in

Korea (wished to stay anonymous), which by policy does not allow users to modify the game but has a group of people applying the modification, regardless of the policy. The following sections are prepared as follows. Section 2 will present a literature review on DMSP, generativity, and user technology affordance. Section 3 describes the method and data, and lastly, Section 4 offers the expected results and discussions.

II. Literature Reivew

2.1 DMSP (Digital Multi-Sided Platform) in Online Games

Studies regarding the platform of IS are picking up speed. Major innovations are based on different platforms. Microsoft Windows, Apple's IOS, and Google's Android are all well-known platforms, but webpages such as YouTube and marketplaces such as Google's Playstore and Apple's App Store are all mentioned as platforms in research(Gandhewar, & Sheikh, 2010; Courtois et al., 2011; Gonçalves, Walravens, & Ballon, 2010). The reason the term platform is used on so many different levels is mainly due to its definition. Sun et al., (2015) defines the IT platform as "a technological base allowing residing components to split, merge, create, modify, and delete among themselves and with components outside and during its course, leading to transactions by stakeholders within the ecosystem."

The DMSP is also a platform but focuses more on the stakeholder transactional relationship occurring within the platform as it emphasizes multi-sided play. The studies using the term (Digital) multi-sided platform(Tan et al., 2016; Tan et al., 2015; Seamans, & Zhu, 2014; Evans, & Schmalensee, 2010) all specify and elaborate the transaction of multiple entities within the platform.

Online games also have an ecosystem consisting of multiple DMSPs. To start with, the game itself, connecting thousands of users via network connection, can be referred to as a platform. On the game platform, users engage with other users to complete the given quest, create guilds, engage in commerce (Buying and Selling Game Items), and in some cases, generate game components. There are also platforms that create a part of the ecosystem which is outside the game. The user communities have been highly functional in supporting the game. Some communities are an extension of the game, in which users do what they usually do on the game (communicate with other users, buy and sell items, create guilds, and seek new members), but there are also communities that create, share, and/or sell user-made content, such as drawings and writings based on the game. Yet another group of DMSP creates a link with the game servers and clients providing simulations and information about content that are randomly generated on the game. There is a platform

officially supported by the service providers, but platforms operated by users are much larger in volume; posts and access ratios of user-operated platforms exceed that of the official platform in many cases.

So far, the evolution and development of DMSP has always aimed to better satisfy the needs of the entities involved(Tan et al., 2016; Tan et al.,2015).

However, this new model presented by Microsoft is asking users to pay for something that was once free. Charging for content has always been a subject to be treated with much caution, because it has a high risk of customers abandoning and moving to an alternate platform(Lopes, & Galletta, 2006).

Researchers found that users consider the criteria of expected benefit of the digital product, quality of the digital product, reputation of both MOD maker and the service providing platform, and form of delivery when making a purchase decision of an online content. From here, we add one more criterion, prior experience, because the current action by Microsoft is modifying an already-existing platform and content. Given that the content being prepared to be sold in the market is somewhat already existing in the free market, thus the market platform providers should be able to present the high-quality content users feel is worth paying for. If the service provider blocks the use of content outside the market in an attempt to entice users to use the market platform, while the above criteria are not met, actual case results show that a balloon effect will take place and direct the needs to the black market(Rouse & Arce, 2006) through a new type of DMSP. Therefore, we hypothesize the following:

H1-a. The user threshold of acceptance for content on the pay-for market will be higher compared to the free market based on previous experience of using similar content free of charge.

The provider's side may also have priorities regarding criteria to successfully satisfy and attract users to the new platform. We ordered the expected priorities as follows:

H1-b. The platform providers will be most interested in meeting the criteria in the following order: quality of the digital product, form of delivery, expected user benefit, and reputation.

2.2 Generativity of Online Games

The theory of generativity, first introduced by Epstein and his colleagues (1984), has been long used in the fields of psychology(Erikson, 1950, 1963) and sociology(McAdams & Aubin, 1992; Ackerman et al., 2000) to understand how generativity in human behavior affects creativity(Epstein, 1996, 1999); Epstein et

al., 2008).

However, generativity in IT is a recent concept following the modularity of IT(Yoo, 2013). Modularity, one of the leading tools of innovation, refers to breaking down a big product into smaller pieces when generating(Langlois, 2002; Schiling, 2002). By doing so, the complicated system is simplified and makes it much easier to handle(Sosa et al., 2004), just like the Ford conveyer belt in manufacturing simplified the company's work. In the IT system, these small components are then combined with other components to create something unexpected, thus leading to innovation(Yoo et al., 2010; Kauffman, 1993).

On the other hand, generativity works the other way around. Generativity, unlike modularity, does not have a boundary of completion, and therefore it bears much room for creativity to take place. A good example is the unexpected collaborative knowledge sharing mode on Google Maps. When MyMaps was first made, the developers did not know that MyMaps would soon have a real-time camera module to help in responding to disasters(Yoo, 2013).

While both modularity and generativity help generate new ideas by combining different components, another significant difference lies in to whom the control tower belongs. In a modularity affecting the platform setting, the control usually belongs to the platform owners(Baldwin & Woodard, 2009), while the generativity-affected platform cannot be centrally governed (Yoo (2013)). The study of Um et al.(2015) involves a decade-long study of data of available APIs extracted from WordPress; this study empirically presents that the IT ecosystem has experienced massive growth on behalf of the generativity. Another study shows that the number of available titles affects users' selection of adapting a certain game-playing platform(Cenamor et al., 2013). Both are a good reference of generativity to the platform ecosystem and new user attraction. The results align with the suggestions of Eaton et al.(2015) that, for a platform to survive, it has to be self-sustaining with heterogeneity. Following previous evidence, we suspect that, even from the same game, if it is serviced through different platforms, there is a possibility that users' selection of platform will be affected by the level of generativity available. Thus,

H1-c. The number of MOD available will have a positive relationship with the number of users playing from that platform.

In the context of online games (RPG in this research), modularity is represented by how game users use the object already provided within the game to create something new. Users would engage in using in-game objects to make new pastime games, events and parties, all of which the service provider (the control tower) did not expect. Generativity would enable the users to use the opened source codes to produce new game objects or services which have not been prepared by the service provider; their actions include slight graphical alteration, new quest designs, and fixing bugs that were not treated by the

service provider. Because the users are individually building and distributing the objects (MODs), the service provider cannot be a control tower of the platform. With the shift of power to control, autonomy is given to users in the game in which they engage. Based on the literature highlighting the function of autonomy and motivation(Adie et al., 2008; Reeve et al., 2004), the following hypothesis is made:

H2-a. Generativity will have a positive relationship with autonomy, which will influence user motivation to play, thus increasing a game's product life cycle.

2.3 User Technology Affordance

Affordance of new technology has been a main stream of research for IS; the Technology Acceptance Model (TAM), one of the most significant models of IS, also concentrates on determining the factors affecting users' adaptation to technology(Davis, 1989). Many studies have since extended from TAM, adding factors to better explain the subject(Venkatesh & Davis, 2000; Venkatesh, 2000; Venkatesh et al., 2003). User affordance of new technology is important in IS literature, because the existing technology must be used to provide meaning. Even if the technology is great, it is useless if the people cannot afford it, either because they do not feel the need or they find it too difficult to use. Strong et al.(2014) provide the following definition: "IT affordance is an action potential of individuals or organizations using technology or IS to fulfill a particular intention." There is a number of studies investigating users' technology affordance level and how it shapes the technology application in the IS literature. Tan et al.(2015) applied the IT affordance to understand the DMSP interaction of an Australian ride-hailing application, GoCatch. He also used the same concept, IT affordance, to investigate how Alibaba, China's largest e-commerce platform, grew to be what it is today(Tan et al., 2016). Wagner et al.(2014) apply affordance to creating knowledge through social media.

In this research, we also follow the definition suggested by Tan et al.(2016) due to the characteristics of MODs provided. Game users use the IT of a MOD building kit to express and apply their ideas on the game and fulfill an intention by sharing it with the general public. Creating a MOD requires extensive background study in coding and programming, while using a MOD also requires a level of understanding regarding the game file structure, as users must add, delete, or modify certain folders or files to apply an existing MOD. Therefore, we believe that the IT affordance of users will play a critical role in their decision making regarding the use of the MOD or not, which as a consequence will affect the user's decision to continue playing or not. We

hypothesize the following:

H2-b. IT affordance will have a positive relationship with game-use life span, such that users with high IT affordance (MOD creators and users) will engage longer in the game compared to non-MOD users.

Also, based on the study by Deng et al.(2013), we have assumed that users engaging in the games' DMSP have a longer game use life span. Given that MOD creators must gather extensive feedback from the people using that MOD to fix bugs and optimize the package, the communication engagement through the DMSP will by far exceed that of non-creators. With this assumption, we hypothesize the following:

H2-c. MOD creators and users engaging in more communication with the community will have a longer game-use life span compared to non-MOD users.

III. Method & Data

Due to the nature of DMSP and the complicated stakeholder interactions, an objective approach using data only might not be enough to explain the phenomena (Koch & Schultze, 2011). Because research on all factors—DMSP, generativity, and online games—is genuinely new, no specific model exists to address the hows and whys within. Therefore, we use the case study research method as our main methodology, which would allow us to interpret the ideas and actions of entities relevant to the phenomena (Klein & Myers, 1999; Siggelkow, 2007). By doing so, we expect to properly address the question, “How will the DMSP evolve to meet the requirements of generativity, a new concept?” Previous research on DMSP also shows that such an approach is suitable in case no theoretical model exists (Tan et al., 2016; Tan et al., 2015).

Although extensive interviews may help explain the mechanisms, it is also important for us to provide number data to answer the first question, “Will generativity affect user engagement level and the life span of playing games?” To answer this question, a survey will be prepared and distributed to the game players' communities. The questions will include verification questions such as, “Have you applied the MODs to your games?” and questions to address the level of user engagement “Do you think the using of MOD increased your level of game engagement?” “How long have you been playing this game compared to other non-MOD games?” etc.

In selecting the cases to use, we have applied the following criteria. First, MODing should either be legally supported or be banned by the game service provider. In the legally supported case, the DMSP therefore should function as a medium for collaborative generation and adaptation for all entities. On the

other hand, where such action is forbidden, we must understand why it is banned and the consequences of such action. Second, in the case in which MODing is officially supported, the MODs generated by users should outnumber the MODs provided by the service provider. We aim to see how and why users engage in game building. The number of available user-made MODs should be a good index. Third, the game should be provided on many different platforms so we can observe the relationship of MOD availability and adaptation. Fourth, the game itself should have been serviced for at least 5 years, for the average lifespan of an online game is within that boundary (White paper on Korean games(2015)). With these criteria, we have selected examination of two different games: 1) Elder Scrolls: Series (Morrowind~Skyrim SE) and, as a supplement, 2) a Korean online game which requested to stay anonymous. Both online games take the form of Role Playing Game (RPG) and has been serviced for more than 10 years. The Elder Scrolls series supports MODing and is provided through online, XBox, and PlayStation, while the Korean game, serviced only through online, has banned it.

IV. Expected Results & Discussions

Through the course of the study, we expect to see that user generativity has a positive effect on user engagement and extension of the user game life cycle. Traditionally, flow theory explains that people playing games sometimes experience the flow; a state in which a person is fully focused and loses sense of all other things(Curtiss, 2011). A lot of game playing behavior is explained using the flow theory, and from this research we expect that the flow will extend not only to playing the game but also to the process of making and sharing the MODs among all other users. Also, opening parts of codes for user access may provide a good method to enrich the current online games saturated with similar scenarios and quests.

The preliminary data found at STEAMSPY (<http://steamspy.com>) partially support our hypothesis that the MOD possible games will see longer user engagement. From total number of people who downloaded or purchased the title, Skyrim (MOD possible) retained about 40% of users and about 4.9% played during the last 2 weeks. On the other hand, the 'anonymous' game retained about 36% and had only 1.1% of total owners play during the last 2 weeks. Through further study, we plan to achieve better understanding in the mechanisms and reasons behind.

However, we also expect to see a technical barrier for users adapting MODs, and therefore will show different levels of game engagement depending on it. Another interesting aspect found, but not treated in this research, is that there is an intense, heated debate among users regarding whether or not using the

MOD should be allowed in current contexts, because MODing is banned in most games by game providers. The group with MODs banned claimed that MODing is unfair, while the group in which MODing is legal defends the accusation by claiming their MODing does not affect any others playing the game. This argument between users may also be a possible research theme for future studies.

At the platform level, the idea of creating a charged marketplace will still need to be more cautiously discussed between entities. This is a new possible source of revenue for providers, which also adds ease to the central management of the MODs. However, users are being asked to pay for what they once used for free. When payment and reward are involved with MOD makers and users, a new relationship is made, shifted from pastime enjoyment to tasks receiving compensation once accomplished. Many studies claim that providing a payment for an action demotivates users' motivation to engage (Jin & Huang, 2014; Wade, 2004; Herzberg, 1964). The possibility of the new planned marketplace demotivating users to voluntarily engage in MOD generating cannot be overseen. The cases presented show that allowing generativity to games has opened a new era of user engagement. However, there is still a need to investigate this aspect further regarding different game types, specific demographics, etc. This research aimed on RPG but games on other fields such as First Person Shooting (FPS), Real Time Strategy (RTS), Arcade etc. may show different results. These games also have MODs called 'xx (respective name) hacks', which in most cases are banned by the service provider. Accumulating the results of the extensive research, which is to follow, may provide both academia and the industry a better understanding and further guidelines for setting future directions of online games and their market.

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