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Gamification and Civic Engagement in Metaverse Seoul: Evaluating the Appropriateness of Commercial Gamification Strategies in a Public Platform

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Abstract: *Public digital platforms are increasingly embedding gamification mechanics to increase civic engagement, often without adequate consideration of their efficacy or suitability. This paper critically explored how commercial-style gamification could influence user participation in a civic context through an in-depth study of Metaverse Seoul, a public metaverse platform launched by the Seoul Metropolitan Government. Based on qualitative feedback from 43 users of Seoul Digital Innovation Governance Group, findings indicated that participants desired more commercial gamification features to promote daily engagement. However, this revealed a mismatch between user expectations shaped by commercial platforms and civic-oriented principles of public service delivery. This study highlights the need to align gamification strategies with intrinsic civic motivations and to establish appropriate success metrics for public platforms. It emphasizes the importance of understanding citizen motivations and expectations when designing technology-mediated civic participation platforms. This research concludes that commercial gamification approaches are incompatible with civic missions. Thus, reconceptualization is needed for public contexts.*

Keywords: Gamification; Civic Engagement; Metaverse; Public Platform; Digital Public Services

1. Introduction

The advent of digital platforms has really revolutionized the way governments engage citizens and opened a new avenue of participation and service delivery. In different parts of the world, such as the GovTech Catalyst in the UK or Singapore's Smart Nation, various initiatives on digital platforms for public service delivery have been tried, which have offered many lessons about the challenges and opportunities in digitizing civic engagement. To this extent, Metaverse Seoul was launched in 2021 by the Seoul Metropolitan Government with the aim of allowing its citizens to represent virtual space and securely interact with municipal services on their own and engage in civic activities [1]. As one of the first metaverse platforms worldwide operated by a public body, it indeed represents an interesting case to study the integration of gamification strategies in a public service setting.

In this vein, the highly advanced technological infrastructure of South Korea and its high level of digital literacy create the ideal ecosystem in which to test digital public service [2]. That said, like many around the world, Metaverse Seoul has faced challenges maintaining active user participation and aligning user expectations with its civic-oriented mission. Many users indicated that Metaverse Seoul needed to include more commercial-style gamification features to retain and support the daily use of the platform. This critique brings forth critical questions regarding the appropriateness of commercial gamification strategies to public platforms and the probable mismatch between user expectations and civic goals.

By examining user responses and the outcomes of commercial gamification in a public service context, this study provides insights for designers and deployers who want to implement a civic engagement-focused digital platform.

With its highly developed technological infrastructure and high degree of digital literacy among the population, it finds ideal ground for experimentation with digital public services here [2, 3]. Metaverse Seoul was counting on gamification to further contribute to user participation. However, the platform continued to have problems maintaining user participation and balancing these users' expectations with its civic objectives.

Rarely, if at all, did the users suggest that Metaverse Seoul should implement additional commercial-style gamification features aimed at motivating users to be more engaged and to log in daily on the platform. Such suggestions beg basic questions regarding appropriateness of applying commercial gamification strategies to public platforms, the mismatch between user expectations versus civic goals. Research questions are as follows:

1. Why did users request more commercial-style gamification features in Metaverse Seoul?
2. How does the desire for increased gamification reflect a misalignment between user expectations and the platform's civic objectives?
3. What are the implications of applying commercial gamification strategies in a public service context?

2. Literature Review

2.1 Gamification in Commercial and Public Platforms

Gamification refers to the application of game design elements in non-game contexts. It has emerged as one of the most widespread approaches on commercial and public platforms to enhance user engagement and motivation. Commercial platforms use gamification primarily to boost user retention and participation and, consequently, revenue. It is based on extrinsic rewards through points and badges, leaderboards, and progress bars. Xu et al. show in the study [4] that gamification in mobile apps considerably raises the loyalty of users and their engagement by rewarding users frequently and by keeping users' interest.

In civic platforms, however, gamification aims to foster and inspire citizens towards civic engagement rather than aim at maximum revenue generation. Platforms like FixMyStreet in the integrate game elements to encourage users to report local issues, thereby supporting civic participation. Applications of gamification in civic contexts are thus successful if they create more valuable citizen involvement than mere sustained user activity. As Bista et al. argue public sector gamification should align with civic objectives and prioritize intrinsic motivation over extrinsic incentives [5].

2.2 Intrinsic vs. Extrinsic Motivation in Gamification

Understanding the balance between intrinsic and extrinsic motivation is crucial in designing gamification It therefore becomes very important to know the balance of intrinsic and extrinsic motivations in implementing gamification strategies, especially in the case of public platforms. On this note, Self-Determination Theory has taken a stance by postulating that intrinsic motivation emanates from an individual's inner needs for autonomy, competence, and relatedness to enable him to act out of inherent interest in the activity itself [6]. Conversely, extrinsic motivation is aimed at being created through the reception of external rewards such as money, points, and badges [7].

Extrinsic motivators are extensively used in commercial platforms to prompt behavior [8]. However, this dependence on extrinsic rewards will result in the long run in the undermining of intrinsic motivation-the so-called "overjustification effect" [7]. That becomes problematic since civic platforms depend on long-term engagement. Intrinsic motivation-such as a sense of duty, contribution to the community, and personal fulfillment-once fostered in public platforms, provides deeper and more engaging user interactions [9].

2.3 User Expectations Shaped by Commercial Platforms

The pervasiveness of gamification within popular commercial services such as social networks, mobile games, and fitness applications has defined users' expectations of all digital services' experience accordingly [10]. Indeed, services like Facebook, Duolingo, and Fitbit engage users through game elements such as competition on leaderboards, tracking progress, and rewarding it, in this way conditioning them to expect similar mechanics of engagement from other digital services.

This is especially true when users interact with public platforms that lack familiar elements; therefore, users interact with them less [11]. It is a great challenge for public services to focus on civic engagement rather than habitual user retention; the goal is usually not the same as for other domains. In fact, application research findings suggest that the transfer of commercial gamification mechanics directly to public services without

adaptation can bring about disengagement or superficial interactions that do not align with the intended civic objectives [5].

2.4 Measuring Success in Public Platforms vs. Commercial Platforms

Success metrics for commercial platforms commonly revolve around user retention, daily active users, and time spent on the platform-all factors that relate directly to revenue generation models [12]. For example, social media and mobile app companies use such metrics to attract advertisers and increase sales via in-app purchases [13].

Success, however, needs to be measured with regards to the quality of civic participation as well as contribution towards societal well-being in public platforms [14]. For instance, while the rising rate of engagement is commendable, a public platform has to assess the level of users' engagement in civic activities as well as its consequence on community outcomes [15]. Success must be measured by the level of social effect, inclusion, as well as democratic participation to ensure the design of the platform resonates with civic objectives [16].

2.5 Challenges of Applying Commercial Gamification to Public Services

Commercial gamification strategies also raise several problems when these are applied to public services. In most cases, any tactics of extrinsic rewards, including points or badges, are generally not appealing to citizens who have intrinsic motivating factors to contribute to civic activities [17]. Work in a civic context is generally motivated by duty, reasons to contribute to the community, or personal values [5]. Too much focus on game elements risks trivializing important civic concerns by simplifying complex challenges to minimal tasks [18].

Public platform design should also ensure that they are accessible. Gamification strategies dependent on advanced technology or complex game mechanics may inadvertently exclude less technologically savvy populations and contribute to the digital divide [19].

2.6 Best Practices for Gamification in Public Platforms

By developing solutions to these challenges, researchers recommend some best practices for gamification in public platforms. First, the game elements should be in line with intrinsic motivational support for autonomy, competence, and relatedness of [6] and [9]. Second, the mechanics of gamification is to be purposefully designed to evoke meaning in civic engagement, and not just to drive habitual use as in [8].

These principles of inclusivity and accessibility ensure the participation of all kinds of citizens in these gamified civic activities, regardless of their technological proficiency [20]. The public platforms should explicitly communicate the rationale for applying gamification and the behavioral goals it aims to reinforce, thereby expanding the scope of information provision, interactivity, and reflection beyond their use in isolation [21]. Finally, ethical concerns on privacy, user manipulation, and unintended consequences should be addressed through design principles that promote user well-being and the responsible functioning of platform [22].

3. Methodology

3.1 Data Collection and Sources

The primary data in this study is the report of the user survey titled "Pilot Evaluation Report of Seoul Digital Innovation Governance Group (Metaverse Seoul)", obtained from the Seoul Metropolitan Government's Digital Policy Office through a public information request. The survey, conducted in 2024, includes responses from 48 members of the Seoul Digital Innovation Governance Group, who were selected as part of the city's policy development initiative. This group, composed of both experts and citizens, participated in shaping the city's digital policies and technology adoption. Participants were distributed across three session dates: Session 1 (April 2nd) with 16 participants, Session 2 (April 16th) with 18 participants, and Session 3 (April 25th) with 14 participants. They submitted feedback reports during the Seoul Digital Innovation Governance Group's pilot operations of the "Metaverse Seoul" platform [23].

While the sessions involved 48 participants, a total of 42 written feedback responses were collected and analyzed for thematic insights. These responses covered nearly all aspects of the Metaverse platform, including user interface, engagement mechanisms, and overall user experience. For instance, one participant noted, "*But I wondered whether holding meetings in the Metaverse would really be as effective as using Zoom*"(Participant

1-8), reflecting skepticism about the platform's practical utility. Open-ended questions encouraged elaborated responses, providing rich material for qualitative analysis.

In addition to this primary dataset, 58 user reviews from app stores and 17 media articles were also collected to contextualize the public reception. However, these were used solely to support background understanding and were not included in the thematic coding process.

Each participant was assigned a specific identifier based on the session and their order of appearance (e.g., Participant 1-1 was the first participant in Session 1). This system enabled direct quotations to be used in the analysis while preserving anonymity.

3.2 Data Analysis

3.2.1 Method

Data were subjected to thematic analysis, a method suitable for identifying and reporting patterns within qualitative data [24]. The steps of analysis involved, first, immersion in the data by familiarization through repeated reading the material to get a feel of the content. Then, initial features were coded and developed into preliminary themes. An iterative and reflexive review of codes and themes was conducted to ensure consistency and accuracy the trustworthiness of the analysis [25].

3.2.2 Analytical Process

A six-step thematic analysis process [24] and each step's outcome are described:

1. Step 1: Familiarization with the Data

All 42 feedback responses were read multiple times. During this stage, reflective notes were taken to identify emerging patterns such as dissatisfaction with usability, expectations of gamification, and confusion about the platform's purpose.

2. Step 2: Generating Initial Codes

Through line-by-line coding, meaningful units were extracted from each report. Examples of initial codes include "unclear platform goal," "redundant features," "difficult navigation," and "lack of motivation to return." These codes captured both critical evaluations and constructive suggestions from participants.

3. Step 3: Searching for Themes

The codes were grouped into preliminary thematic categories. For example, codes addressing navigational difficulty and interface complexity were combined under *Usability* and *Accessibility*, while remarks about superficial or redundant platform functions led to the emergence of the *theme Lack of Meaningful Functions*. Additionally, comments that expressed disappointment over the platform's lack of tangible benefit or daily usefulness were grouped under Need *for Practical Value*, reflecting the expectation that civic platforms should provide concrete incentives or utility.

Step 4: Reviewing Themes

The themes were iteratively reviewed for internal coherence and refined by examining overlaps. For instance, the theme *Need for Practical Value* was conceptually close to codes under *Commercial Expectations*. Both reflected participants' tendency to evaluate civic platforms using standards drawn from commercial services. These two were therefore merged into a more encompassing category that captures how public service platforms are increasingly assessed through consumer-oriented expectations.

Step 5: Defining and Naming Themes

Three final themes were defined through this refinement process. First, the theme *Commercial Conditioning of Civic Users* reflects participants' commercial frame of reference. Many users expected avatar customization, gamified rewards, or entertainment-oriented features typically offered by private digital platforms. Second, *Unclear Institutional Purpose* captures confusion regarding the civic role of the platform. It was described as a 3D homepage lacking meaningful functionality or public engagement mechanisms. Third, *Accessibility and Design Barriers* highlights how the platform's interface complexity and lack of intuitive design posed challenges, particularly for older adults or those unfamiliar with digital environments.

Step 6: Writing the Report

Finally, the findings were reported in the Results section. Each theme was supported by representative, anonymized quotations (e.g., Participant 2-2, 2-12), which illustrate recurring patterns in user perception and provide the empirical basis for the study's implications.

3.3 Ethical Considerations

Ethical approval was obtained in the sense that anonymous data were made available through appropriate official channels. Since the data were in the public domain, and no personal identity could be traced from such data, formal ethics review as laid down by the policy was not required.

4. Analysis

4.1 User Expectations and the Call for Increased Gamification

The main suggestion that arose from the user responses was that Metaverse Seoul required more commercial-style gamification features to maintain users and promote daily engagements. Daily rewards, challenges, and competition were three of the most discussed additional features that participants recommended incorporating into the platform. For example, one participant stated, "*It would be nice if logging in earned mileage points that could be used to level up my avatar. Or, if enough login mileage points are collected, they could be exchanged for bus mileage, which would likely increase participation*" (Participant 2-2).

This interest reflects how users have been socialized by their earlier experiences with commercial platforms; users seemed to equate the success of Metaverse Seoul based on metrics from consumer applications, such as daily active users and habitual engagement through extrinsic rewards [8].

4.2 Misalignment Between User Expectations and Civic Objectives

Users' emphasis on gamification reveals a misalignment between user expectation and the platform's civic objectives. While users viewed rewards as tools for sustaining everyday engagement, Metaverse Seoul aimed to foster meaningful civic interaction rather than encourage usage driven by external incentives. One user expressed doubt about this alignment, stating, "*I have fundamental doubts about whether citizens will use Metaverse Seoul enough to justify their time investment*" (Participant 2-12).

This would be indicative of a misalignment in users' perception and the actual positioning of Metaverse Seoul, since users thought of Metaverse Seoul as similar in concept to commercial sites and thus adopted strategies for user engagement therein. Furthermore, such perception could have been set broadly by the initial gamification embedded in the application-that is, one usually found in commercial applications.

4.3 Appropriateness of Commercial Gamification in Public Services

It is questionable whether the use of commercial gamification strategies in boosting daily engagement on a public platform is appropriate. Commercial gamification exploits extrinsic motivators to maximize user retention and time within the platform [4]. However, in a civic context, there is a need for meaningful interaction that can be realized via intrinsic motivations.

Self-Determination Theory emphasizes that such motivation is more sustainable and meaningful if it was internally driven, that is, by the desires for autonomy, competence, and relatedness [6]. For civic engagement, users could be motivated further by opportunities to give back to their community and shape public policy [26].

For example, one user suggested, "*It would be good if picking up trash earned you 10 won per piece. If financial rewards are difficult to implement immediately, the platform could at least use virtual currency to allow users to buy items for their avatars*" (Participant 2-17). While this might increase engagement, it risks detracting from the platform's civic goals by focusing too heavily on extrinsic rewards rather than fostering genuine civic participation.

Commercial gamification of Metaverse Seoul might have overshadowed such intrinsic motivators. Further, the feedback given to include more gamification in order to drive daily usage suggests users approached and used the platform through a commercial frame, which might undermine the civic goals of the platform.

4.4 Reconsidering Success Metrics for Public Platforms

Such emphasis on boosting daily engagement through gamification provokes an idea that users equated success metrics better suited for commercial platforms with success metrics applicable to public services. Although in commercial contexts, the relationship between high retention rates and profitability [12] does exist, for public platforms, success needs to be evaluated by citizen participation quality and the impact created towards civic outcomes [27].

It would thus appear that the feedback of the users reflects some kind of misunderstanding of the purpose of the platform in terms of quality-versus-quantity approaches to engagement. This may perhaps be a reason such misalignment could be influential on their recommendations toward further gamification in driving habitual use without consideration of whether such engagement supports the civic mission of the platform.

5. Discussion

5.1 Misalignment of Gamification Strategies with Civic Objectives

The findings indicate the critical misalignment of using commercial gamification strategies and civic purposes of Metaverse Seoul. Whereas users requested more gamification features to increase daily engagements, such strategies may not align with the fundamental goals of public service platforms. Application of extrinsic motivators common in the commercial context does not easily translate into meaningful civic engagement.

It thus indicates that more thoughtfulness is required in designing the gamification elements in congruence with the intrinsic motivations related to civic participation. Approaches that foster a sense of purpose, community involvement, and personal development may be more congenial to continuous engagement on public platforms [26].

5.2 Influence of User Expectations Shaped by Commercial Platforms

User expectations, framed through experiences with commercial platforms, informed conceptions of Metaverse Seoul. This points to a design challenge for public service designers: aligning user expectations with the civic purpose of the platform. What is needed is clarity about the purpose of the platform and the intentional design of an engagement strategy that resonates with civic motivations.

5.3 Redefining Success Metrics in Public Platforms

This emphasis on more frequent daily use calls for reevaluation of the metrics of success for public platforms. Instead of user retention and habitual use measures, metrics should focus on how well the platform is performing in driving meaningful civic participation, service accessibility, and community outcomes [27].

5.4 Implications for Design of Public Service Platforms

These results suggest that civic platforms like Metaverse Seoul need to reconsider the applicability of commercial gamification strategies. Instead of extrinsic rewards like points, badges, and leaderboards that merely increase daily usage but do little to support deeper engagement, platforms should incorporate elements that support building within the community, collaborating with others, and growing as a person. These better align with civic goals and encourage meaningful participation.

A more sustainable approach to user engagement on civic platforms can be achieved through value-driven mechanism. First, collaborative challenges offer an alternative to competitive dynamics by inviting users to work toward shared civic goals. Examples include virtual simulations of neighborhood clean-ups or participatory urban planning, where collective action yields broader community benefits.

Second, purpose-driven rewards can reinforce users' contributions to civic life. This might be achieved, for instance, through recognition systems that emphasize users' achievements both within the virtual space and at real-life municipal events. For example, public acknowledgments or awards given for outstanding contributions to community initiatives can help solidify the civic purpose of the platform.

Clear communication of a platform's civic goals is essential for helping users understand how user activities contribute to broader outputs in society. This can be facilitated through onboarding tutorials and in-

app messaging of the real-world impact of user actions thereby aligning user expectations with the platform's civic mission.

Policymakers can use the result from this study by prioritizing gamification strategies that promote collective civic participation and align with public interest. Civic platforms will be more effective when designed to support collaboration, real-world recognition, and meaningful engagement.

6. Conclusion

This study examined the appropriateness of applying commercial gamification strategies to a public service platform, focusing on the case of Metaverse Seoul. The feedback of users, calling for more gamified features to boost daily engagement, signals a mismatch between user expectations and civic objectives of the platform. This implies that applying commercial gamification strategies is not appropriate in the context of a public platforms, which should prioritize motivated civic participation.

These findings suggest the need to rethink gamification strategies in better alignment with civic value and a reevaluation of success metrics for public platforms. Focusing on the quality of engagement and designing features that support civic goals are ways that public platforms can better fulfill their missions.

This study has several limitations. First, the analysis is based on a small group of participants in a specific pilot program in Seoul. This limits the generalizability of the findings. Second, the data relies entirely on self-reported feedback. This may lead to recall bias or social desirability bias. Third, the study focuses on a single user group, excluding perspectives from older adults, low digital literacy users, or other socio-economic segments. Future research should expand participant diversity and incorporate behavioral data to validate and complement self-reported insights.

Conflicts of Interest: The authors declare no conflict of interest.

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