Improve User Engagement for Instagram Using A/B/N Testing*

MSIN0094 Case Study

Dr Wei Miao

November 13, 2024

1 Case background

Instagram, one of the world's leading social media platforms, has achieved significant success by providing users with a visually driven, interactive space for self-expression, connection, and content sharing. With over a billion active users, Instagram has become a major platform for individuals, influencers, and businesses to connect with broader audiences. Despite its popularity, Instagram faces bottlenecks in maintaining high levels of user engagement and growth, particularly as competition from other platforms increases. To address these challenges, Instagram must continuously innovate and find new ways to keep users active and engaged.
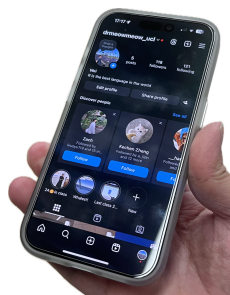

Figure 1: Screenshot of A Nobody's Instagram

> **Question 1**
> Conduct a situation analysis for Instagram in the UK market. Focus on the following point:
>
> - What is Instagram's business model?
>
> - How does Instagram make revenues?
>
> - Who are Instagram's customers?
>
> - What are the major competitors and their relative strengths and weaknesses compared with Instagram?
>
> - Who are the collaborators of Instagram?
>
> - PESTLE analysis: any particular legal and regulatory issues that Instagram needs to be aware of?

Gamification offers a promising approach to deepen engagement and retain users, creating a more interactive and rewarding experience that may align with Instagram's focus on community building and personal expression. In recent years, gamification has emerged as a powerful tool in marketing and business, aimed at enhancing user engagement and loyalty across various industries. Gamification involves integrating game-like elements—such as points, levels, badges, and rewards—into non-game contexts to make experiences more engaging and enjoyable (Seaborn and Fels 2015). By tapping into fundamental human motivations like achievement, competition, and social interaction, gamification encourages users to interact more frequently and meaningfully with a platform or brand. From loyalty programs to interactive challenges, gamification strategies are designed to increase user activity and foster a deeper emotional connection to the brand.

2 Gamification strategies for Instagram

Social media platforms, in particular, are leveraging gamification to boost user engagement and retention. With features like badges, leaderboards, and interactive challenges, these platforms aim to make user interactions feel rewarding and enjoyable. In this case study, we will explore how gamification can be effectively applied on Instagram, using psychological and behavioral economic theories to design features that drive user engagement.

2.1 Prospect theory

Prospect theory, a behavioral economic theory, describes how people make decisions under uncertainty (Kahneman 1979). It suggests that individuals evaluate potential gains and losses

relative to a reference point and tend to be risk-averse in the domain of gains but risk-seeking in the domain of losses.
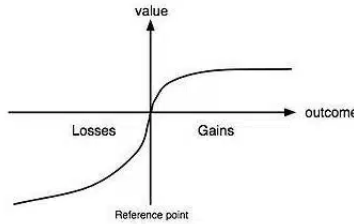

Figure 2: Prospect Theory

In e-commerce, many platforms use prospect theory by presenting "limited time only" sales or "only 3 items left!" notifications. For instance, an online clothing retailer might display a countdown for flash sales on specific products, encouraging customers to buy now or miss out. Additionally, a feature like "items left in your cart are almost sold out" leverages loss aversion to encourage users to complete their purchases. This taps into the user's fear of missing out (FOMO), driving them to act quickly to avoid potential regret over a lost deal.

> **Question 2**
> Based on the Prospect Theory, how could Instagram leverage the concept of loss aversion to increase user engagement?

2.2 Social comparison theory

Social comparison theory posits that individuals gauge their social and personal worth by comparing themselves to others (Ye et al. 2022). People engage in social comparison to assess their abilities, opinions, and status relative to others. By creating a leaderboard, users could see their standings based on metrics like follower engagement, post interactions, or content quality. Ranking users against one another could motivate them to post more frequently, improve content quality, or engage more with other users' posts. The leaderboard would provide real-time feedback, fostering both upward and downward comparisons. Users higher up the leaderboard would feel motivated to maintain their status, while those lower might be motivated to increase their activity to climb the ranks.

Figure 3: Social Comparison Theory

Fitness apps often incorporate social comparison to keep users motivated. For example, a fitness app might display a leaderboard that ranks users by steps taken, calories burned, or workout streaks. Users can compare their progress with friends or a larger community. This often motivates users to stay active and improve their standing. By allowing users to see both how they compare to others and celebrate their achievements, such apps encourage regular engagement and goal completion. Companies like Strava, which adds social aspects to running and cycling, have successfully used this approach to drive sustained engagement.

Question 3
Think about how Instagram could leverage the Social Comparison Theory to increase user engagement. Provide a specific example of a feature or mechanism that Instagram could implement to encourage social comparison among users.

3 Testing proposals using A/B/N testing

We have proposed various strategies to boost user activity on Instagram. Now, we need to design an A/B/N testing plan to evaluate the effectiveness of these strategies.

3.1 Step 1: Decide on the Unit of Randomization

Question 4

- What would be the best unit of randomization?

3.2 Step 2: Mitigate Spillover and Crossover Effects

Question 5

- What are the potential problems for spillover and crossover?

3.3 Step 3: Decide on Randomization Allocation Scheme

Question 6

- How should we determine the randomization scheme?

3.4 Step 4: Collect Data

Question 7

- What is the sample size we need?
- What data should we collect?

3.5 Step 5: Data analytics

Question 8

- Once data are collected, how can we test our hypothesis?

Based on the analyses, it seems that both proposal A and proposal B have a significant positive impact on user engagement. However, we need to consider the costs and feasibility of implementing these features on Instagram. By conducting A/B/N testing, we can evaluate the effectiveness of different gamification strategies and make data-driven decisions to optimize user engagement on the platform.

References

Kahneman, Daniel. 1979. "Prospect Theory: An Analysis of Decisions Under Risk." *Econometrica* 47: 278. https://doi.org/10.2307/1914185.

Seaborn, Katie, and Deborah I Fels. 2015. "Gamification in Theory and Action: A Survey." *International Journal of Human-Computer Studies* 74: 14–31.

Ye, Teng, Wei Ai, Yan Chen, Qiaozhu Mei, Jieping Ye, and Lingyu Zhang. 2022. "Virtual Teams in a Gig Economy." *Proceedings of the National Academy of Sciences* 119 (51): e2206580119. https://doi.org/10.1073/pnas.2206580119.