

# Impact of Digitalization on the Monetization of Mahjong Games

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## INTRODUCTION

Per technological development and mediation of everyday communication, interaction and entertainment, many traditional games that used to require physical attendance and human-to-human interaction, such as sports games and board games, have been digitalized and can be played on mobile devices. Such digitalization of games has also influenced the game of Mahjong, one of the most significant traditional games in both Hong Kong and in Greater China. Countless versions and types of digital Mahjong exist today, and they can be played on PC, consoles, arcade machines, or mobile phones, while the physical Mahjong remains popular as before.

Previously, Wirman and Leino (2017) discovered that the game of Mahjong is shaped significantly by the technological platform it utilizes. Following the same line of thought, this paper focuses specifically on the impact of digitalization on the monetization model of Mahjong games. In so doing, we apply the framework for paid and free digital business models by Davidovici-Nora (2014). Her model suggests that Paid-to-Play (P2P) games have a simple and linear economic architecture of D-M-A-R (Development-Monetization-Acquisition-Retention), while in Free-to-Play (F2P) games the architecture is more complex and dynamic, since the games are fully digitalized and can be updated through patches that allow developers to analyze user behavior and to adjust gameplay accordingly.

In the study, we played Mahjong games on various technological platforms from physical, console, PC to mobile Mahjong games. Basic information of the games such as player structure, art style, gameplay, rules as well as monetization models were recorded. We then compared traditional, physical Mahjong games to digital arcade, console, PC,

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and mobile Mahjong games. Several significant differences between the physical and digital Mahjong games were found. The played games were categorized based on their degree of digitalization. Physical Mahjong games, including the one assisted with an automated shuffling table, is considered non-digital, while Mahjong games in previous generation of consoles are partially digitalized as they require a physical copy and a console to be played. Latest Mahjong games on PS4 and PC are more digitalized given their online gaming functionality. Lastly, mobile Mahjong games are the most digitalized as they can be downloaded online and played on the phone literally anywhere at any time. In the final phase of the study, these categorized Mahjong games were analyzed from the point of view of P2P and F2P business models.

## FINDINGS

The initial findings of the study suggest that:

1. Compared with non-digital Mahjong games, digital Mahjong games are cheaper and easier to acquire and play. Compared with non-digital Mahjong games, digital Mahjong games can be played almost anywhere at any time. They are easy to purchase and require little in setup. In terms of price, buying a console/PC Mahjong games usually only cost around 150 HKD, which is much more affordable than going to a Mahjong parlor to play. Most mobile Mahjong games are F2P games. Digitalization significantly influences Mahjong's monetization model as it lowers or even eliminates the entry fee.
2. Compared with physical Mahjong games, digital Mahjong games tend to have a stronger linkage between retention and monetization. The linkage between retention and monetization is vital for digitalized Mahjong games to make profit, especially for F2P games. Most of the F2P Mahjong games monetize players via microtransactions, which aims at enhancing players' gaming experience to trigger the loop of retention-monetization.
3. Digital Mahjong games focus on monetizing on a certain group of players, rather than all players. About half of the iOS games are F2P games, and F2P games rely on less than 10 percent of paying players to gain profit (Davidovici-Nora 2014). This model has led to Mahjong games that focus on monetizing hardcore and addictive players, while the physical Mahjong games monetize all players at the same price. Further, the partially digitalized console Mahjong games allow players to purchase DLC for richer content and enhanced player experience adding another way to profit from devoted players. As an example of hard-core play on mobile versions of Mahjong, Xian Yu, an e-commerce website in China, suggests that people use the *Tencent Happy Mahjong* game for illegal gambling.
4. Online digital versions of Mahjong allow novel ways for time-based monetization. Alongside digitization, the study of monetization models reveals that online connectivity affords methods that lead to drastic changes in play experience. Traditionally, the monetization model in Mahjong parlors is based on how long the player can play. The player therefore purchases play time instead of pays to play a round (e.g. arcade game) or pays to own a copy of the game (e.g. physical tiles or a digital copy). For example, some mobile FTP games use a mixed time-based and round-based monetization where the player is allowed to play for specific number of rounds per day before they are asked to pay.

Technical platforms	Availability	Player base	Price (Entry Fee)	Linkage between retention and monetization	Monetization targets
Physical Mahjong	Low	Low	High	Weak	All players
Arcade Mahjong games	Medium	Medium	Low	Weak	All players
Console & PC Mahjong games	High	High	Low	Strong	All Players (Focus on hardcore players)
Mobile Mahjong games	Very High	Very High	None	Very Strong	Hardcore players only

## DISCUSSION

To conclude, digitalization has significantly changed the monetization model of Mahjong games, from one-time purchase to microtransactions. Monetization also changed from monetizing on all players to monetizing on hardcore players. These changes have both positive and negative effects on play cultures surrounding Mahjong. On the one hand, the digitalization of Mahjong games has lowered the entry barrier for newcomers as the game is way easier to acquire and play. The game developers aim to make the game more enjoyable as they rely on retention to trigger monetization, and they will analyze user data to adjust the gameplay for higher player satisfaction. Digital technology also facilitates the preservation of Mahjong rules of various region and countries. On the other hand, many Mahjong games targeted to monetize on hardcore players are being used as tools of illegal gambling. Their art style is very similar to casino aesthetics with shiny gold bars and diamonds, creating an association to gambling. In such games, other values of the Mahjong culture such as family, neighborhood, and festival, become widely ignored and the tradition lost.

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