

Investigating the Behaviors of Mobile Games and Online Streaming Users for Online Marketing Recommendations

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ABSTRACT

Mobile games have become online leisure and communication activities, so in recent years, different generation players have gradually become more involved in mobile games and the market has grown. Online streaming refers to entertainment and communicate in the form of a real-time broadcast on the internet, such as mobile gaming apps which create a one-stop game audio-visual interactive online marketing and social media/network platforms. Using a market survey on Taiwan players, a total of 1,020 questionnaires data are incorporated into a relational database. Big data analytics, including cluster analysis and association rules, are used to determine game players' profiles and their preference patterns and rules. Using cluster analysis, the authors divide Taiwan mobile game players into three clusters and then find each group's profiles. In addition, this study develops a rule-based recommendation approach, association rules, for investigating mobile games players' online streaming and purchasing behaviors in terms of online marketing recommendations.

KEYWORDS

Big Data Analytics, Electronic Commerce, Mobile Games, Online Marketing Recommendations, Online Streaming, Social Media/Network

INTRODUCTION

Mobile game software is executed on a mobile device, such as a mobile phone, tablet or a hand-held gaming device. Because of the popularity of mobile devices, mobile games have quickly captured the electronic market (Browne & Anand, 2012). Similarly to a massive multiplayer online game (MMO) on a desktop computer, mobile game devices support online multiplayer games (such as PRG and co-fighting game) or single player games (match-three puzzle game) (Feijoo et al., 2012). A good adhesion strategy gets the most out of the crowd by making the player stay as long as possible in the mobile game (Laine & Suk, 2015). Using mainline tasks, emergency replicas, games and service design, samsara and hell levels and other gifts or rewards means that players to log into the game many times a day, the games infiltrate every moment of daily life and mobile games become daily

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necessities, reducing the possibility that players are lost (Chang & Chin, 2011). With the popularity of touch devices and wireless networks, moving online games from bulky computers to lightweight mobile devices allows players to be online at any point in time, making it easy or even necessary to participate in each task (Penttinen et al., 2019). When the game is tied to a social network such as Facebook, the mobility of the game is increased and online streaming gaming and social network activities become ubiquitous (Evans & Saker, 2019). Stress relief and the need for entertainment also create an instantaneous reaction and focus. Mobile games also give players self-confidence role (Balakrishnan & Griffiths, 2018). Mobile games have become a leisure and recreation activity, so in recent years, different generation players have gradually become more involved in mobile games and the mobile game market has grown (Civelek et al., 2018).

Online streaming has become increasingly popular with the availability of broadband networks and the increase in computing power and electronic distribution (Wang & Nadda, 2015). Only electronic media and enterprises can be broadcast and information systems (IS) is available to general Internet users and families (Al-Weshah, 2018). Online streaming refers to entertainment in the form of a real-time video broadcast on the Internet on an online audio and video (AV) platform (Payne et al., 2017). Mobile gaming apps, such as YouTube Gaming and Google Play, create a one-stop game audio-visual interactive online streaming platform. Mobile gaming apps also provide a social network with a mechanism in which players, moderator, fans and web celebrities can interact and chat online in real time (Koukopoulos & Styliaras, 2013). Mobile gaming apps allow players to support their favorite gamers through interactions between players and moderators in a real streaming environment. The sponsorship function for professional players and advertising generate different types of income, which improves the quality of creation (Hasan et al., 2018). Games using a traditional joystick or video game consoles allow player alliances and interaction between mobile games. Mobile gaming, online streaming, social networks and online purchases are technological developments that give online marketing opportunities (Hsiao & Chen, 2016).

Personalized recommendation systems (PRS) use the user's interests and purchasing behavior, to recommend information and merchandise for users. With the expansion of e-commerce and the number of goods available online, customers require time to find the goods that they want to buy (Chang & Jung, 2017). Browsing of a large number of irrelevant information sources and product processes means that consumers experience information overload. Therefore, PRS was proposed (Modarresi, 2016). A personalized recommendation system is a high-level business intelligence platform that uses mass data mining to allow e-commerce website to provide a complete personalized decision support and information service for its customers (Xu et al., 2016). The recommendation system for a shopping website recommends the product for the customer and automatically completes the process of personalized selection of goods to meet the personalized needs of customers (Guan et al., 2005). The main algorithms for e-commerce recommendation system include association rule-based recommendation (Santos et al., 2018), content-based recommendation (Zheng et al., 2018) and collaborative filtering recommendation (Xiao et al., 2018). The biggest advantage of personalized recommendation is that it collects user data and makes personalized recommendations for online users based on user characteristics, such as interests or preferences (Lee & Brusilovsky, 2017). In an increasingly competitive environment, personalized recommendation systems can retain customers and improve the service of e-commerce systems. A successful recommender system (RS) can bring great benefits using precise big data analytics (Gao et al., 2019). Within electronic markets more and more recommendation systems are employed in order to improve the preselection of available products and services (Adomavicius & Tuzhilin, 2005). Determining a user's preferences is an important condition for effectively running these automatic recommendation systems (Xiao & Benbasat, 2007). This study develops a rule-based recommendation approach for investigating mobile games players' online streaming and purchasing behaviors in terms of online marketing recommendations.

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