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4G TECHNOLOGY GAMES

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ABSTRACT:

With the advent of Smartphones, the global mobile applications market has increased exponentially. In particular, mobile games have become extremely popular. As such, this study explores which mobile technologies have been used in mobile games, and their relation to contemporary mobile gamers' download choices. Apple's App Store chart and Google Play chart were utilized to analyze the common technological and gaming design features of the contemporary mobile games that are most popular with the gamers, and also to examine similarities and differences between the most popular smartphone and tablet computer games. The results show that popular mobile games maximize players' touch-based enjoyment (i.e., swiping, sliding or drawing). In addition, the popular mobile games have at least two of the following features: simple rules, social interactions, and the removal of enemies and missions that do not require defeating an enemy to complete. Mobile games that require careful controls, such as tilting the screen or fast and unpredictable movements, tended to be more downloaded on the iPad than on the iPhone. In terms of ranking fluctuations, the paid iOS game charts were statistically more stable than the free iOS game charts.

Keywords: mobile game, mobile technology, popular mobile game, smartphone.

INTRODUCTION:

In contemporary society, mobile phones have become much more than simple mechanisms by which to make calls. From a functional aspect, they resemble "the Swiss Army knife of the digital era"; not only can phones be used to text others, they can also be used to take pictures, play music and hold your credit card information as a digital wallet (Choe, 2009). From the moment that we wake up until we fall asleep at night, our mobile phones are never far from our sides. There were 6.8 billion global mobile phone subscriptions in 2013, according to the International Telecommunication Union (2013). No other technology has achieved as rapid an adoption rate as the mobile phone (Katz, 2007). Even older generations have adapted more to mobile phones than the Internet (Plaza, Martín, Martin, & Medrano, 2011).

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A Brief History of Mobile Phones:

The first generation (1G) mobile phone was launched in the early 1980s and was used solely for making phone calls. Moreover, it was heavy and big, a so called "brick" phone.

When the 2G mobile phone was introduced in the 1990s, it utilized a much more advanced data transmission system that converted the analog 1G signal to a digital 2G signal, which dramatically improved the voice quality while decreasing the amount of data needed for the process.

2.5G is sometimes described as 2G Cellular Technology combined with **GPRS**.

The **EDGE** (*Enhanced Data Rates for GSM Evolution.*) standard is an evolution of the GSM standard that modifies the type of modulation.

After the 3G mobile was introduced, more than 70% of the countries in the world began using the wideband code division multiple access (WCDMA), which originated with the GSM standard (ITU, 2011a). 3G allowed for a high-speed data service at a reduced cost (ITU, 2013).3.5G are **HSDPA**(High speed Download Packet Access)respectively. It provides a smooth evolutionary path for 3G network allowing for higher data transfer speeds. Data transmission up to 8-10 Mbps(and 20 Mbps for some system).

3.75G refer to the High speed Uplink Packet Access(**HSUPA**)technology. The HSUPA mobile telecommunications technology is directly related to HSDPA and the two are complimentary to one another.HSUPA will enhance advanced person-to-person data applications with higher and symmetric data rates like Following the success of 3G mobiles, the industry released the 4G mobile, which had a higher wireless data transmission speed.

5G technology has extraordinary data capabilities and has ability to tie together unrestricted call volumes and infinite data broadcast within latest mobile operating system. 5G technology has a bright future because it can handle best technologies and offer priceless handset to their customers.

Mobile Games in the media convergence Era:

When mobile phone games first appeared on the 2G system they mainly consisted of on-deck, casual, flash-based games, such as Tetris (Hjorth, 2011). As the data transmission speeds of mobile phones improved in the 3G era, mobile service providers opened their paid-application markets. However, at the beginning, the application markets consisted of a few simple categories such as games, news and photography services.

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3D Technology and Mobile Games:

According to Chehimi et al. (2006), 3D computer graphics have not only attracted more gamers than games containing solely 2D content since they were first introduced in the early 1980s, but they have also become an important part of maximizing the gamers' playing experience. However, due to resource constraints, such as "small screen sizes, limited processing power, small memory footprints, and critical power consumption (Chehimi et al., 2006, p. 20)," mobile game developers have been faced with difficulties when designing 3D mobile games. Although mobile game play has improved with smart Web capable touch screen phones, such as the Apple iPhone, Samsung Galaxy and HTC Diamond (Richardson, 2011), mobile 3D technology is still not competitive in the mobile game market. Thus, mobile games have begun focusing more on utilizing smartphone-centric features, such as wireless internet, touch screens and location-awareness functions, in order to maximize gamers' enjoyment with feeling a presence, specifically, a "Telepresence." According to the International Society for Presence Research (ISPR), telepresence is a user's experiences of "being there" in a virtual environment and temporarily overlooking or misconstruing their mediating experience (ISPR, 2012; Hartmann, et al., 2009). Hybrid and augmented reality games are good examples of mobile telepresence. Moreover, their characteristics such as spatiality, sociability and mobility (de Souza e Silva, 2009) are also reflected in contemporary mobile games.

Hybrid Reality Games:

Hybrid reality games are archetypal mobile centric games based on location-awareness and internet connection technology. For example, Can You See Me Now?, the pioneer of current hybrid reality games published by Blast Theory in 2001, was played by off-line and on-line players. The main goal for the off-line players was to catch the on-line players' graphical avatars as they moved around a specific part of the city. Both sets of players were able to discover their opponents' location on a digital map via an internet networking connection. With wireless internet and location awareness technology, mobile games have been trying to actualize hybrid reality games on smartphones.

Top Free Games in the App Store:

Including Candy Crush Saga, Deer Hunter 2014 and My Talking Tom, seven games were ranked on both the free iPhone and iPad charts (see Tables 3 and 5). Some of the top 10 free Play Store games (i.e., Pet Rescue Saga, Subway Surfers, Despicable Me, Temple Run 2 and Plants vs. Zombies 2) were also released for the iOS platform. However, they were not as popular for iOS users.

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Top Paid Games in the App Store:

Minecraft, Angry Birds Star Wars II, Duck Dynasty, Heads Up!, Pixel Gun 3D and Cops N Robbers were included on both the top 10 paid games for the iPhone and iPad, even though most of their rankings were not same.

CONCLUSION :

Today, game developers attempt to blur the boundaries between virtual and reality by using developed technologies in order to give gamers more of a presence within a game. Various applied technologies in mobile media have allowed numerous types of mobile games from social to hybrid and augmented reality games. On the other hand, when it comes to tele presence, which is usually created via high-quality 3D and sound reality technology, mobile games are falling behind console and computer games. Thus, in order to overcome these limitations, until the technology has been perfected, game designers must rely on making the most out of the technology of today and make the games as addicting as possible. Since mobile media are deeply involved in the contemporary users' lives, mobility is the strongest asset of mobile games. In order to make the games addicting they must rely on features that appeal to the gamers.

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