

Chapter 1

A Survey on Strategies, Trends, Economics, and Prospects of Cloud-Based Gaming

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ABSTRACT

Cloud gaming-as-a-service is emerging as one of the potential revenue generating futuristic fields with a higher growth rate. Cloud gaming service is an entertainment service that depends totally on the cloud computing technology. Cloud gaming delivers games to the gamers, anywhere at any time without any gaming specific hardware and without diminishing the gamer's quality of experience. From getting the user command to rendering the graphics, everything is processed at the gaming service provider end. The only need for the gamer is to use a thin client like web browser to access the cloud game server. In this chapter, we have detailed about the cloud game systems, cloud game services, issues in cloud gaming, economics of cloud gaming, research prospects and the evolution of cloud gaming service.

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INTRODUCTION

In the internet era, cloud computing has revolutionised gaming technology to an unimaginable extent. The availability of smart phones and the internet with large bandwidth have provided the possibility for people to access the internet based services frequently. The accessibility of general public to the advanced technology has garnered new entertainment business models. Cloud gaming is one of the fast growing entertainment industry. In the past, in order to play video games, users required high computing power CPUs and expensive graphic cards. The computer will be stationed in one particular place and the user will play the game using that computer. Trying a new game was not that easy because new games required new hardware and software upgradations. This made users to spend more money in updating their expensive graphic cards and processors for each game. Even though users update their computers; each year new upgradation will be released for both software and hardware. If a user likes to play a newly launched game with high definition graphic quality, then he/she has to spend some extra money in buying and updating the game requirements. The upgradation will not last long since the advancements in gaming quality will demand the user to buy new gaming devices in the future.

In today's world, because of cloud computing, the strategy of game playing has changed drastically. Cloud gaming provides high end gaming experience via thin clients no matter what device gamer is using. The only criterion for a gamer is to have an internet connection and a device with a thin client like the browser to play the game. Cloud gaming is one among the popular cloud based services providing game-as-a-service to the end user. Cloud gaming is also known as Game on-demand. In cloud gaming, rendering the video between the user and device, storing the game data and computational tasks like rendering game frame are carried out in the cloud server itself. Cloud gaming attracts a huge number of users since it does not require players to upgrade and change their hardware. Instead, it brings high definition games using the broadband connection and a thin client. A thin client may be a light weight computer with a browser, gaming console, setup box and a Television or a mobile device (Lee, Chen, Su, & Lei, 2012).

CLOUD GAMING OVER TRADITIONAL GAMING

Traditional games that are played by humans are programmed into applications. These programmed applications are called as traditional computer games (Wikipedia, Traditional game, 2015). Video games were not familiar with people until the introduction of computers. Cathode ray tube amusement device is the first known gaming device with a display. This device did not have any storage device or com-

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