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Player Adaptive Entertainment Computing

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ABSTRACT

The entertainment computing industry has experienced exponential growth over the last few years and has also attracted many researchers to the field. This area of the entertainment industry has become a highly competitive area. While in the past, excellent graphics were enough to increase the likelihood of success for such entertainment computing application. In the present climate a high standard of graphics is assumed or expected. Recently, it can be observed a shift to focus on the design of the entertainment media for individual, so as to increase the perceive value. The shift of this focus is similar to the customer relationship management (CRM), the term used in business world. One of the important models in CRM is personalization, which is to provide perceived value to customer when interacting with a business. In entertainment computing industry, the objectives of the designer or developer are quite similar to that of the business, which is to increase the perceive value when interacting with the entertaining media. This is normally done by market research to identify the target group or pre-production concept pitch.

In this presentation, we introduce the concept of Player Adaptive Entertainment Computing (PAEC), which is to provide personalized experience for each individual when interacting with the entertainment media. For discussion and illustration of this concept, we narrow our focus on entertainment digital games. Two of the important areas in PAEC are to create specific targeted strategies to cater for individual game player, and also to perform personalization. Personalization in games can be in term of difficulty levels, game resources, emotion, characters, etc. In game design, the first area can be easily identified and addressed in considerably easiness. Normally, during this first stage, the genre of the entertainment game will be determined. However, the second area of personalization is sometime difficult. This is due the differences of players in term of their personality, background, skill and learning ability.

The most important part of the PAEC is related to the perceived value from the game player. Normally, the perceived value is directly related to the factors such as fun, challenge, entertaining, and interest level. As individual is difference, personalization becomes the important factor to improve this perceived value. Personalization for PAEC is defined as any set of actions that can tailor the entertainment media experience to a particular user or player. In this presentation, we will touch on two small areas of the PAEC for illustration of the player adaptive ability using Artificial Intelligence. One is related to the personalized difficulty level adjustment and the other one is related to adaptive resource allocation.