Fantasy, Farms, and Freemium: What Game Data Mining Teaches Us About Retention, Conversion, and Virality

(Keynote Abstract)

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ABSTRACT

In December of 2010, the new game CityVille achieved 6 million daily active users in just 8 days. Clearly the success of CityVille owes something to the fun gameplay experience it provides. That said, it was far from the best game released in 2010. Why did it grow so fast? In this talk the key factors behind the dramatic success of social network games are explained. Social network games build word-of-mouth player acquisition directly into the gameplay experience via friend invitations and game mechanics that require contributions by friends to succeed. Software analytics (mined data about player sessions) yield detailed models of factors that affect player retention and engagement. Player engagement is directly related to conversion, shifting a free player into a paying player, the critical move in a freemium business model. Analytics also permit tracking of player virality, the degree to which one player invites other players into the game.

Social network games offer multiple lessons for software engineers in general, and software mining researchers in particular. Since software is in competition for people's attention along with a wide range of other media and software, it is important to design software for high engagement and retention. Retention engineering requires constant attention to mined user experience data, and this data is easiest to acquire with web-based software. Building user acquisition directly into software provides powerful benefits, especially when it is integrated deeply into the experience delivered by the software. Since retention engineering and viral user acquisition are much easier with web-based software, the trend of software applications migrating to the web will accelerate.

BIOGRAPHY

Jim Whitehead is an Associate Professor and Chair of Computer Science at the University of California, Santa Cruz, where he helped create the Computer Game Design program. He is also the founder and board chair of the Society for the Advancement of the Science of Digital Games, which hosts the yearly Foundations of Digital Games conference. Jim's research interests in the area of games include level design and procedural content generation. In the field of software engineering, Jim performs research on software bug prediction, software repository mining, and software evolution. He runs both the Augmented Design Lab and the Software Introspection Laboratory at UC Santa Cruz. Jim was the Program Co-Chair for the 2009 and 2010 Mining Software Repositories conference. Jim received his PhD in Information and Computer Science in 2000 from the University of California, Irvine, and his BS in Electrical Engineering from Rensselaer Polytechnic Institute in 1989.

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