Development Centric Player Feedback Analysis for Video Games: A Review

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***Abstract*—Using player feedback found abundantly on the Internet to analyze and produce useful information for the development process of video games is a promising research area. A proper analysis of the feedback collected from the players will allow the developers to identify crucial features requested by the players as well as bugs and imbalances present in a video game. In the past, various approaches have been taken by researchers to create a solution to analyze the vast amount of player feedback available publicly such as on review platforms. The various approaches taken, and their findings are neither very clear nor properly documented considering the variations present in them. If the limitations and the findings of the existing work are properly analyzed and documented, it will assist in future researches in this domain. This paper presents an analysis of the existing work related to development centric video game player feedback analysis and is a result of ongoing research, by the end of this research we plan on implementing the various approaches explored and overcoming the limitations identified in this paper.**

Keywords—video games, feedback analysis, ML, NLP, text mining, steam, reddit

I. INTRODUCTION

This section provides an introduction to the domain of "Development centric player feedback analysis for video games" with the relevant background information as to why it is such a promising research area.

A. Background

Video game market is one of the most rapidly expanding software markets in the world [1]. As shown in Figure 1, in 2016 the revenue generated by the video games industry exceeded 90 billion dollars and is expected to grow annually at a rate of 6.8% through 2020. Globally video games are played by 2.2 billion players [2].

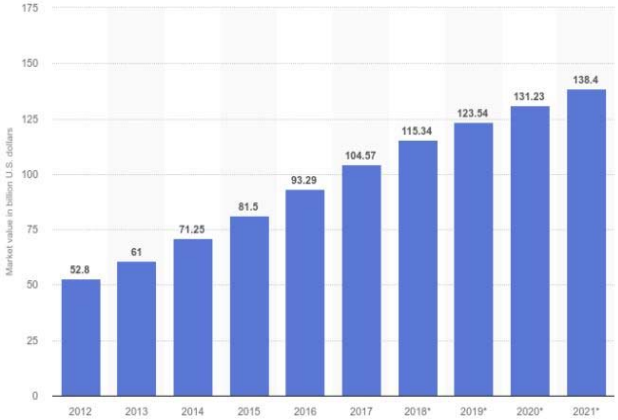

Fig. 1. Growth of video gaming industry. [2]

Considering the development process of video games, although it takes up a considerable portion of commercial software projects generating a large revenue each year, it varies from traditional software development methods. One main reason is that the requirements are subjective, such as "must be fun" and in terms of testing and quality assurance games are usually tested by real-world players during live test phases and contains few automated tests [3]. Therefore developing a successful video game has been found to be very challenging which needs to be crafted in a way that caters to the preferences of the majority of the player base.

B. Motivation

Integrating player feedback into the development process of a video game has been identified as something that 'went right' during the development of some of the successful video games in the past [3]. Release strategies such as 'Early Access' (EA) are a prime example where an early version of a game is given to the players and the game is built gradually with the feedback from the players [4]. One effective way of receiving player feedback is forming on-line communities surrounding discussion forums such as "Reddit". This not only allows the developers to keep in contact with the community but also plays a vital role in the marketing process of the video game [5]. Andin some cases, developers have shown to prefer discussion forums over reviews to understand the expectations of the players as well as to collect their feedback [6].

The development process of a video game can directly benefit from a much efficient feedback analysis method where development teams are able to easily integrate the changes requested by the majority of their players and identification of critical bugs are more likely to be brought forward by the players themselves. This also drastically improves the relationship between the target community and the development team resulting in a much more successful product.

In Section II, we explore the ways in which we gathered data and domain knowledge. In Section III, we discuss the feedback analysis process in depth and the identified problems. In Section IV, we discuss the existing solutions developed to solve the problem identified. In Section V, we evaluate the existing solutions on a few evaluation metrics. In Section VI, we explore the identified limitations and drawbacks and in the last section, we conclude the paper by identifying possible future work.

II. STUDY SETUP

The required domain knowledge was gathered for this study by two main methods:

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