

Will you be my Friend?

A look at how Indie developers are addressing co-operative gaming in virtual reality's isolated environment

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ABSTRACT

An investigation into how cooperative gaming can be achieved in different worlds, looking at Indie developers for virtual reality releases and their solutions to better provide an answer for the project team. With these techniques a better cooperative experience can be provided and implemented in the final product, with a tangible presence from the non-virtual reality player being key to the success of cooperative experience.

Keywords

Virtual Reality, Cooperative gaming, Keep Talking and Nobody Explodes, Black Hat Cooperative, VR the Diner Duo, Steel Crate Games, Team Future, Whirly Bird Games,

1. INTRODUCTION

Since the announcement of the Oculus Rift Kickstarter campaign on 1st August 2012¹, the use of virtual reality in the household became a reality rather than a dream and once the HTC Vive system was released on 5th April 2016², there were 124³ games available. The increase in popular support led to major games companies focusing on delivering games to Virtual Reality. HTC had the backing of Valve Corporation⁴, the company behind digital distribution platform Steam⁵, who wasted little time integrating popular developer platforms Unity 3D engine⁶ and Epic Games Unreal 4 engine⁷ into SteamVR⁸, the virtual reality system incorporated with HTC Vive hardware device. This integration allowed developers to be better supported with their game creations in a virtual reality environment, where many had never developed before. This paper will look at how developers have solved the unique problem encountered when facing co-operative games. For this comparison, three indie titles have been chosen to better reflect the resources and time the project team are working with. These games are: 'Keep Talking and Nobody Explodes', 'Black Hat Cooperative' and 'VR The Diner Duo'. To best select the correct method with which to integrate local co-operative gaming into the project, a comparison and analysis will be made on how each game solves the problem of creating co-operative experiences when working in different worlds. For example, how to make the player not using the virtual headset feel as much a part of the game as the player inside the virtual world.

2. FIELD

In recent years, games such as Portal 2⁹, Left 4 Dead 2¹⁰ and Killing Floor 2¹¹ have found success relying on delivering a game built on a foundation of co-operation. With the immersion of virtual reality, this paper will look at the solutions found for creating co-operation in the immersive isolated environment virtual reality delivers. While comparing 'Portal 2', 'Left 4 Dead 2' and 'Killing Floor 2' would give insight into how the problem of co-operative gaming was solved on those projects, focusing

on the virtual reality titles, 'Keep Talking and Nobody Explodes', 'Black Hat Cooperative' and 'VR the Diner Duo', would better support the route the project team is following.

3. KEYPLAYERS

Three indie developed titles will be focused upon for comparison and analysis in this report; the first of which is Keep talking and Nobody Explodes, which was originally created as an entry for global game jam 2014¹² by Steel Crate Games¹³. Secondly the paper looks at Black Hat Co-operative by Team Future¹⁷ and finally VR the Diner Duo by Whirly Bird Games¹⁸. Whilst there are many other choices that could have been compared in this scenario, these three indie development studios can give a better insight into problems the team may encounter for the project.

3.1 Keep talking and Nobody Explodes

After its global game jam success in 2014, Keep Talking and Nobody Explodes was later developed for full release on 16th July 2015. Advertised as a local Multiplayer party game¹⁴, the premise was "one player is trapped in a virtual room with a ticking time bomb they must defuse, the other players are the experts who must give instruction on how to defuse the bomb by deciphering the information found in the bomb defusal manual".

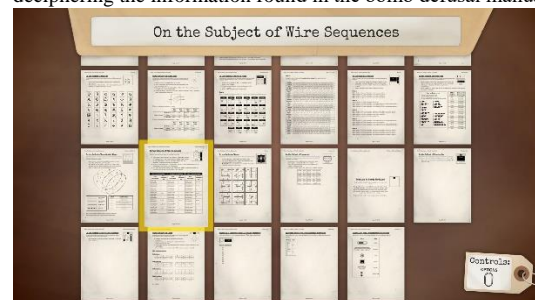


Figure 1. A huge number of puzzles means that survival is easier the more people you play with.

The developer's use of virtual reality to represent the bomb environment leaves the headset wearer feeling isolated. The "experts" only require a voice and the bomb defusal manual, which can be acquired for free¹⁵. The headset wearer then frantically describes what they are looking at, for the experts to subsequently locate the correct defusal method in the documentation. The key to this working is the feeling of isolation gained by the player in the headset, with the clear visualisation of a ticking clock on the explosive device creating apprehension in the headset wearer who is then frantically explaining the puzzle they have before them for the experts to solve. This then causes tension for the experts who are not directly in the game and this tension draws those not in the virtual world itself into the game, solidifying the co-operative experience.



Figure 2. The ticking clock helps to create the atmosphere

What Steel Crate Games managed to achieve is a sense that the players not in the virtual world have a tangible connection to what is happening within the game itself and this type of co-operation is the driving force behind the games success.

3.2 Black Hat Co-Operative

Black hat cooperative is an award-winning stealth game¹⁶ that pits the VR Headset user and an ally against artificially intelligent agents trying to remove them from the system. The VR player finds themselves playing as Hammer, walking the hallways of a 3D environment, attempting to avoid detection from the virtual agents whilst searching for treasure, keys and passwords. Their ally plays as Splice, utilising a bird's eye view of the map to guide the VR player to the treasure, warn of enemy agents, hack the system and remove obstacles.

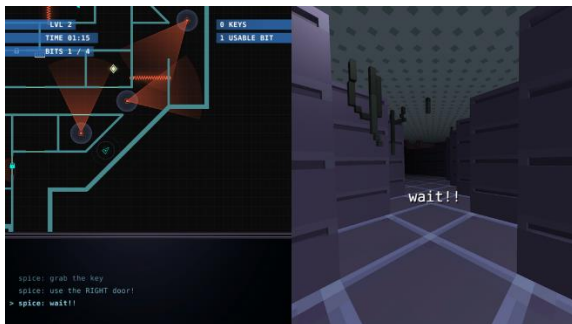


Figure 3. Without the non-VR player's guidance on the left, the VR player on the right would not succeed

Black Hats mix of tense in-game sneaking for the VR wearer and visual cues of unknown traps for the ally on a computer, mean both players must work together to beat the system. This reliance on both players allows each to feel a tangible need within the game, so when they beat the game it was due to co-operation.

3.3 VR the Diner Duo

Created by Whirly Bird Games and released 3rd November 2016¹⁴, VR the Diner Duo places the VR headset player as the chef of a busy restaurant and their ally plays as the waiter getting the orders from the customers, with your combined goal being to create the food required to satisfy the customer. Whirly Bird games have managed to tap into the diner dash style game¹⁹ that has become very popular as a pick up and play game for mobile devices, and enhance the experience for virtual reality.

To solve the problem of co-operation, VR the Diner Duo relies on constant communication between the players and rewards them with a more streamlined delivery of the gameplay, meaning the more they communicate together the better the game will go for them. Accompanied with this is each players responsibility within the game; the Chef must maintain the food, delivering what was requested by the computer, and the waiter

then must deliver to the correct table, ensuring all elements are correct including the beverage's requested.

The rewards for successfully fulfilling a harder level ensure both players feel a part of the overall experience and ensure the player not using the virtual headset feels as much a part of the success as the player with the headset.

3.4 Summary

For co-operative gameplay to be achieved both players must feel as though they have participated and contributed to the success or failure of the play through. The examples shown all indicate that for a player to feel a part of the game without using a virtual headset, relies on them fulfilling a separate core function in the game. With Keep Talking and Nobody Explodes this is achieved by making each player, who isn't dealing with the bomb in the virtual world, an expert, without whom the bomb defuser would not be able to succeed. In Black Hat Cooperative we see the second player being responsible for guiding the virtual player to the goal and overall protecting them from the enemies in the game world. Giving the player not in the virtual world a different view also adds a unique reason to play in that position. Finally, in VR the Diner Duo, whilst the virtual headset player may be in control of the kitchen, it's inevitably the player not in the virtual world who directly interacts with the customer and it's this interaction that determines the score the players receive

3.5 USP

Virtual Reality's impressiveness opened the door for inventive ways for game developers to integrate cooperative play in their games. All the examples shown tackle the problem of integrating cooperative gameplay while immersing one of the players into a virtual world in a similar way, with the use of communication as the driving force between the 2 player's interactions. One feature is rewarding the players for better use of communication as the levels get progressively harder and another is the tools given to those players not in the virtual world. Handing a bomb defusal document to the "experts" for Keep Talking and Nobody Explodes gives them some control over the game and a unique experience, Black Hat Co-operative's use of a separate computer system with a map of the environment and visual cues allows the player not in the headset to control how the gameplay progress.

3.6 Technologies/Approach

By giving the second player something tangible to use, the team project could easily create a co-operative experience, a recommendation would be the use of a map system, where the player on the PC must follow the map to guide the player in the virtual world. Another option would be to give the solutions to puzzles to the second player, this then prompts communication between the two players, thus creating the co-operative experience.

4. CONCLUSIONS

Comparing the three titles it becomes clear; the cooperative games are successful when both players feel they are impacting the game world in some way. To this end the use of external elements such as a digital or paper map with solutions would best benefit the project team if a cooperative element is to be implemented, but the team would need to keep in mind that the second player must feel a tangible connection to what is happening in the game world. Further research could be conducted, in another paper, into multiplayer elements to see if there are other elements from this field that could benefit the team project.

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