Project Deliverable B

Need Identification and Problem Statement GNG 1103 – Engineering Design Faculty of Engineering – University of Ottawa Objective: Empathise with your client and truly understand their problems, limitations, frustrations, desires, and needs. Translate their statements into a list of interpreted needs. Then, organise and prioritise their needs and formulate a problem statement. Reflect this information as a team to determine whether you are actually "solving the right problem".

1. This briefing should contain many needs, which will be identified by empathising with the clients. Feel free to speak to other potential clients related to the project on your own and to look at other similar products on the market. This will help strengthen your results.

2. It is important to take the time to convert what the client is saying and/or doing into properly interpreted need statements.

3. Once a list of needs has been identified, organise these needs into similar groups and prioritise them, justifying what you do as you go along.

4. Once you are confident that your team has identified all of your clients' needs, use them to formulate a problem statement, including all important aspects, while ensuring that it remains short, specific and sexy.

5. Remember to also benchmark user perceptions of similar products (i.e. user benchmarking) to make sure that you have a thorough understanding of the problem and related needs of the eventual and for other potential users. 1. Remember: your client may not know or be able to put into words all the things that they want or need.

6. There may also be unknown information that needs to be clarified or defined (i.e. issues or questions that were not addressed in the initial client meeting). There may also be new issues or needs that are identified after that meeting too. These all need to be documented here and in the next deliverable, depending on when they are identified.

PROJECT DELIVERABLE B - BASED UPON CLIENT MEETING 1:

PROBLEM STATEMENT:

In an increasingly more technology driven society autonomous robots pose problems including; digital dehumanisation, loss of meaningful human control, lack of human judgement and understanding, and impact on our relationship with technology.

OBJECTIVE:

The goal is to create a heightened awareness of the real-world consequences of using such systems, while also using the game's narrative and mechanics to lead players toward advocacy.The immersive experience will educate players on the potential dangers of autonomous systems by placing them in real-world scenarios where their decisions (or lack thereof) carry moral weight.

GENERAL BASIS OF NEEDS:

The core objective is to create an immersive gaming experience that addresses the ethical concerns surrounding autonomous weapons systems. The goal for the porject is to engage players emotionally and intellectually, prompting reflection on these systems' risks and their potential to diminish human control. By fostering empathy and understanding, the game aims to contribute to advocacy efforts to ban autonomous weapons systems.

- Creating an immersive game highlighting the ethical concerns associated with autonomous weapons systems. - focusing this experience to aid in the banning of these autonomous weapons.
- Immersive experience should use players' empathy, it should resonate with the players and hopefully lead to the banning of these systems.
- Understanding current issues with technology as they pertain to autonomous robots and using this knowledge to formulate ways to target players empathy

SPECIFIC IDENTIFICATION OF NEEDS (CATEGORICAL IDENTIFICATION OF NEEDS):

NEED - IDENTIFICATION OF CONCERNS ASSOCIATED WITH AUTONOMOUS WEAPONS SYSTEMS:

- Digital dehumanisation, reducing people to their data, sensor data, we're more than our biometric and cellphone data
- Loss of meaningful human control
- Lack of human judgement and understanding
- Inability to explain what happened or why ("What went wrong?")
- Impact on our relationship with technology

NEED - THINGS TO KEEP IN MIND:

- Why was it behaving that way to add to frustration?
- How do the players feel after completing the game?
- How can we make them feel lost even though they "completed" it?
- Create a scenario to put the players in a mindset
- It's more about the experience with the robot
- It shouldn't be filled with stereotypes, avoid conversations about specific races, ethnicities, etc.
- Build empathy with the client (eg. read real stories)
- Leave it ambiguous and don't target anyone

- The game could include gradual loss of control over the robot as it begins making decisions on its own which would increase the frustration and helplessness the user experiences.
- Audio and visual cues (e.g., heartbeat sounds, blurred vision, or confusing instructions) can make players feel the tension of not being able to act.
- The addition of a post game reflection where the impact of their choices are revealed to them (e.g., consequences of letting the robot act autonomously). This will tie their emotional experience to the real-world implications of autonomous weapons, emphasizing the need for human oversight.

NEED - IDENTIFYING WHO IS THE USER:

- Designing for peers, senior grades of high schools, must engage a younger audience, making the ethical questions relatable
- 25-30 year olds (people you would find in festivals)
- The people running this game aren't engineers. You can't assume that. The game must be designed for individuals without a deep technical background. While it addresses complex issues, the gameplay should remain intuitive and accessible to a general audience

NEED - WHAT KEY FEATURES AND FUNCTIONALITIES WILL BE MOST USEFUL TO USERS:

- The shooting and eliminating piece, we must include traditional gaming mechanics like shooting and eliminating targets, but with a purpose that adds depth to the experience
- Fear and Helplessness, Players should feel fear of losing control and a sense of helplessness in critical moments, mimicking the ethical concerns of autonomous systems acting beyond human intervention.
- Confusion and frustration
- Overwhelmed with the actions of the robots
- You want to make it a game/simulation of choice while not giving them much autonomy and control.
- Playing on users' intimate emotions through auditory and visual cues in order to show how autonomous weapons systems are dangerous to the general public.

BENCHMARK SIMILAR PRODUCTS AND EXPERIENCES (PRE EXISTING PRODUCTS):
The current market for games and experiences that showcase the potential dangers of automated weapon systems is small, but there are still a couple interesting products out there. One website designed to spread awareness on the subject, stopkillerrobots.org , also features an interactive feature designed as a camera filter that challenges the user to escape the targeting mechanisms of a killer robot. This experience primarily raises the issue of depersonalization related to killer bots and the potential for racial, gender, and location biases to effect the targeting of automated weapons systems. As for user feedback on this product, it was difficult to find anything on the topic as there are no reviews or written feedback of any kind. Moreover, there are no videos of people using the interactive filter. However, the filter is designed to make the user feel as though there would be no escape if one of these systems were to target them. This is similar to our client's requirements, where we should make the experience feel as though there is no escape.

Work cited

“Problems with Autonomous Weapons.” *Stop Killer Robots*, www.stopkillerrobots.org/stop-killer-robots/facts-about-autonomous-weapons/. Accessed 29 Sept. 2024.