Project Deliverable B: Needs Identification and Problem Statement

University of Ottawa

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Introduction:

This document outlines the empathizing portion of our design process in making our product for our client. The client is Mines Action Canada, and they are asking for a VR experience to help convince decision makers to vote against allowing autonomous killer robots to be used during warfare or fighting. This document includes the raw data received from the clients during our meeting with them, and turning that data into criteria we could use to design this virtual reality experience, and using those criteria to create a problem statement for our project.

Section 1 - Raw Data:

Throughout the meeting with Mines Action Canada, there were several motifs that were either emphasized or repeated several times. The first of which comes from their website, which describes what they consider to be killer robots, "Unlike other existing weapons, killer robots would not depend on human control or intervention, rather, these weapons would actually choose and fire at targets on their own based on sensors, algorithms (computer programming) and artificial intelligence". This is what our entire project is based on, the fact that the technology exists for a machine controlled by a.i to end the life of a human being **without human intervention**. This definition was repeated several times throughout the meeting. Another idea that was repeated throughout the meeting was that they are "Very concerned about this technology and [are] working at the international level and within Canada to have a preemptive ban on these weapons". The need for the ban to happen **preemptively**, i.e before these robots get released for military use, was also highly stressed throughout the meeting, for reasons that will be discussed in the next section.

Apart from the statements concerning the autonomous weapons themselves, there were several more quotes which deal with the specifications of the VR project itself. The most emphasized aspect of the project was, "What we learned from last year with these VR experiences is that simplicity is key - keep your prototypes and designs simple. Simple, simple, simple". The client made sure that we were aware that they are looking for simplicity in our projects. This will be discussed further in the interpretation of the data. Another major suggestion from the client was, "What we're looking for in terms of the most effective VR experiences are experiences wandering through a cityscape or landscape, recognizing how foreign it looks". This relates to simplicity, and the client stated after this that the cityscape does not have to be any specific place, only that it should be recognizable and set within the present to near future. In terms of the emotions that should be provoked, the client said, "We want a balance between fear and concern, and also hope and motivation". These feelings will be very important to keep in mind throughout the development of our experience, especially when it comes to creating the environment.

Section 2 - Interpretations of Data:

The collected data and quotations tell a lot about the needs of the client. To begin with the first mentioned quotation, their definition of a killer robot gives us an idea of how we should create our environment. We must think about what could happen and **how people would react** to robots that have the ability to kill without any human intervention. Therefore, **our project needs to showcase how the world may be affected by fully autonomous weapons.**

The quote about the preemptive ban of autonomous weapons is one of the driving factors of this project. The entire purpose of this VR experience is to convince decision makers (politicians who have the power to pass laws concerning the ban of autonomous weapons) that killer robots are a real threat in order to push for a ban on

them, before it is too late. This means that our users are politicians, who are not your average user of virtual reality. Thus, **the VR experience needs to showcase the real threat of killer robots in a way that will convince decision makers that action must be taken.**

Moving on to the given suggestions toward our project, one need that the client wanted to emphasize the most was that our VR experience should be simple. Due to the time restrictions, the client believes that the overall quality of the experience will be much higher and more complete if we do not become too ambitious, and we keep things simple. To fulfill this need, **we must ensure that the technical feats are not too difficult to accomplish, and that our final product simply showcases the message that the client wants us to portray.**

An additional need that was expressed from the client was that the environment that the experience takes place in is **immersive** and **believable**. We must be careful when it comes to implementing ideas in this project, as if it strays too far from reality, it may not have the same effect on the users as if it was more based in reality. **The environment in which the experience takes place needs to be immersive and recognizable.**

Finally, the emotions that the speakers stated they wanted the user to feel were concern, fear, as well as a mix of hope and motivation. This means that although our project should make people feel concerned about the future and where these robots may take us, it should also spark motivation for the user to provoke change right now. **Therefore, the client needs the user to feel concern, fear, and motivation.**

Section 3 - Ranking of Needs:

After reflecting and analyzing the discussion answers that were obtained from Mines Action Canada, their design needs have been sorted and ranked:

Design Factors
- 30-60 seconds long, Immersive, Runs smoothly with little bugs, Simple

Content Factors
- Takes place in a recognizable environment, shows the environment, not necessarily people/robots(as well as the robot's impact on the environment), shows the dehumanizing caused by robots.

Impact on audience
- Invokes concern and hope in the user, shows the potential danger of killer robots.

Based on the meeting and interpreting we were able to come up with a design criteria for this VR experience. The design criteria which were given the rank of 5, and were presumed to be the most important were that the project should: be simple and straightforward, show dehumanization caused by robots, and have watchers feel concerned but also a sense of hope. The criterion which was given the rank of 4, and decided to be the second most important was that the video should be short and concise. The criteria which were given the rank of 3 and were considered to be the third most important are that: the environment should be recognizable and realistic, and the video shows just the environment without people or robots. The criterion which was given the rank of 2 and decided to be the least important of the criteria determined from the raw data was that the video runs smoothly.

The problem statement that was made based on the criteria was: Mines Action Canada needs a short, simple and concise video that demonstrates the potential consequences of killer robots in a livable environment that invokes a feeling of concern with a glimpse of hope in the user.