Project Title: Virtual Eye – Lifeguard for Swimming Pools To Detect Active Drowning.

Project Design Phase-I - Solution Fit Template

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Define CS, fit into CC

1. CUSTOMER SEGMENT

CS

Private Swimming pool owners and Life-guards hired at the swimming pool

6. CUSTOMER CONSTRAINTS

CC

Discontinuity in signal may cause signal loss and continuous monitoring is not possible

5. AVAILABLE SOLUTIONS

AS

Prediction process take place only after drowning But we used Deep learning algorithm for Pulse rate detection so that there is a chance for predicting the drowning accident at earlier stage
Merits: predict before drowning under water
Demerits: If network is not available then it doesn't give a result

Explore AS, differentiate

Focus on J&P, tap into BE, understand RC

2. JOBS-TO-BE-DONE / PROBLEMS

J&P

- Detect potential drowning subjects in the Swimming Pool.
- To give better network connection
- To improve new technique to save the child from strangers.

9. PROBLEM ROOT CAUSE

RC

The main problem is an alert is being sent to Lifeguard only after the person is drowned down. • however, they cannot save a person before drowning down

7. BEHAVIOUR

BE

- Taking effective action in case of emergency.
- Saving people's life.

Focus on J&P, tap into BE, understand RC

Identify strong TR & EM

3. TRIGGERS TR

People get triggered by seeing a not well maintained drowning detection system and the lifeguards who are not so well trained to control these situations.

4. EMOTIONS: BEFORE / AFTER EM

Before:

Subject being anxious about their safety in swimming pool.

After:

After the new system is proposed, People are positive and assured

10. YOUR SOLUTION SL

In Virtual-Eye lifeguard drowning detection system, it is possible to extract and store not only the videos but also the pulse rate of a victim so it will be helpful to identify the reason behind the drowning. It can generate revenue from the public and lifeguard and collaborate with maritime sector and other swimming pool authorities . Accurate pulse rate detection is done using Deep Learning.
The model uses advanced YOLO v5 algorithm to detect potential drowning subjects which yields higher accuracy and performance compared to existing solutions.

8. CHANNELS of BEHAVIOUR CH

8.1 **ONLINE**

GPS tracking and networking.

8.2 **OFFLINE**

Calculating distance, checking health condition of a child when the gadget is off.

Identify strong TR & EM