Project Design Phase-I
Problem – Solution Fit Template

Date	12 October 2022
Team ID	PNT2022TMID37969
Project Name	VirtualEye - Life Guard for Swimming Pools to Detect Active Drowning
Maximum Marks	2 Marks

Problem-Solution fit canvas 2.0

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) — CS
Who is your customer?
i.e. working parents of 0-5 y.o. kids

Swimming is a kid's favorite aquatic sport and it's a great stress buster.

6. CUSTOMER CONSTRAINTS — CC
What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices.

Usually, such systems can be developed by installing more than 16 cameras underwater and ceiling and analyzing the video feeds to detect any anomalies.

5. AVAILABLE SOLUTIONS — AS
Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? i.e. pen and paper is an alternative to digital notetaking

One is that the camera is mounted on the underwater swimming pool wall, then monitor underwater swimmer status. A limitation of this equipment is that if too many swimmers, the occlusion problem arises. The other is that the camera is mounted upon the water, and monitors the Swimmer posture change. The reflection and refraction of light in air-water interference will affect the image quality, and drowning man feature this method detected is not easy to distinguish swimmers and divers obviously. The third is a combination of the two, underwater camera and aerial camera matched, monitoring the swimmer posture. This system needs constant observation which is the main disadvantage.

Explore AS, differentiate

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

2. JOBS-TO-BE-DONE / PROBLEMS — J&P
Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.

Every year, many individuals, including kids under the age of 5 drown in the deeps of the swimming pool,and the lifeguards are not well trained enough to handle these situations.

9. PROBLEM ROOT CAUSE — RC
What is the real reason that this problem exists? What is the back story behind the need to do this job? i.e. customers have to do it because of the change in regulations.

Swimming is a kid's favorite aquatic sport and it's a great stress buster. But in the water, beginners often feel hard to breathe which causes choking actions, loss of balance and results in a drowning accident. Some special circumstances, such as cramps, collide with each other, disease or mental stress and so on may also cause swimmer to drown...

7. BEHAVIOUR — BE
What does your customer do to address the problem and get the job done? i.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace)

we need to identify the drowing person in the swimming pool and their actions are identified using the artificial intelligence technology

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

Identify strong TR & EM

3. TRIGGERS — TR
What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.

The triggers are seeing people drowning and the lifeguards are not well trained enough to handle these situations.

4. EMOTIONS: BEFORE / AFTER — EM
How do customers feel when they face a problem or a job and afterwards? i.e. lost, insecure > confident, in control - use it in your communication strategy & design.

Before in the water, beginners often feel hard to breathe which causes choking actions, loss of balance and results in a drowning accident..after the proposed system of the new technology the customers are feeling confident

10. YOUR SOLUTION — SL
If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality.
If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.

By studying body movement patterns and connecting cameras to artificial intelligence (AI) systems we can devise an underwater pool safety system that reduces the risk of drowning. Usually, such systems can be developed by installing more than 16 cameras underwater and ceiling and analyzing the video feeds to detect any anomalies..

8. CHANNELS of BEHAVIOUR — CH
8.1 ONLINE
What kind of actions do customers take online? Extract online channels from #7

8.2 OFFLINE
What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.

Extract online & offline CH of BE

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