Script

**Hook and problem statement:**

"Every day, researchers and scientists around the world spend hours manually subculturing cells. Its an essential process in biotech, pharmaceutical research and academic labs, as well as other biomedically engineering fields. However, there is one main issue. Its slow, boring and cells can easily be contaminated from human error, which prolongs the process. Even the most experienced researchers deal with these challenges.

Imagine a scientist working in a lab (professional) – ‘Ughh I have to pipette and aspirate/dispense all these liquids, I just want to finish this boring process so I can move on to the more interesting stuff.’ \*Makes a mistake\* ‘oh my god I just contaminated my cells now I have to start all over again.’

“Performing the cell subculturing process is outdated. The process itself is so essential but the process is mindnumbingly boring, and leads to mistakes.

What if there was a way to improve this? A process that is quicker, less boring and reduced chances of errors?

Introducing our automated cell subculturing device – Cellsys!!!! This innovation eliminates human error and saves time, with just a few taps on a screen!”

**Introducing the device**

“Our system is designed to automate the cell subculturing process, removing the boring and tiresome manual pipetting, while improving the process and results by maintaining sterility and precision for cell growth.”

“Lets take a look at our groundbreaking device! There are a couple of main components, cartridges, pumps and a touchscreen control interface. All these components come together in a unique system to create our device.”

“Lets dive deeper into the components. The fluid cartridges hold the essential solutions of medium, PBS and trypsin. They can be replaced. The peristaltic pump system ensures that exact volumes are dispensed with no margin of error. Lastly, our intuitive Raspberry Pi touchscreen interface allows researchers to input the volumes easily, and adds to the overall aesthetic of our gamechanging device, Cellsys!”

“Instead of the boring laboured process of manually pipetting step-by-step, you simply place your flask underneath the device, select desired volumes, and boom, our system dispenses the correct fluids in the correct sequence, without any need of manual intervention.

**Technology deep dive**

“Lets take a closer look at the technology behind this system!”

“We’ll start with the fluid cartridges. They allow for a quick fluid exchange, connected through a gravity-fed coupling mechanism. Only when this coupling is attached, liquid can be released from the cartridge. This means that there are no accidental spills that can lead to contamination.”

“Moving on, next is tubing which leads to a peristaltic pump system. These pumps control fluid movement by compressing and releasing the tubing in a precise manner. This ensures exact volumes are delivered by the system with pinpoint accuracy.

“Going away from the pumps is more tubing leading to a nozzle, and the flask is held underneath the nozzle, allowing liquid to enter the flask. All volumes are controlled via the touchscreen interface, where the user inputs his desired amount, before waiting for Cellsys to do its magic!”

“Let’s compare this to existing cell subculturing methods. Manual subculturing requires human handling at every step, takes a long amount of time, and introduces human error and inconsistency. Other automated solutions are very complex and expensive. Cellsys is an affordable and fully automated device that provides precision with minimal user intervention. It really does bring the best of both worlds!”

**Demonstration in action**

“Let’s see the device in action!

Step 1: load the cartridges with the correct fluids. Make sure they snap securely in place.

Step 2: Place the T25 or T75 flask under the dispensing nozzle.

Step 3: Input desired volumes on the touchscreen interface.

Step 4: Press start, step back and relax! Cellsys will take it from here.

PBS will wash the cells, trypsin will detach them, before incubation. The system will then remove trypsin and dispense fresh medium. All this will be done with no manual pipetting. And just like that, your cells are subcultured with precision and sterility. Go focus on the actually important parts of your research, we’ll do the boring parts for you!”

**Manufacturing and future upgrades**

“Now that you’ve seen our first device in action, lets talk about how we built it and our prototypes.”

“Cellsys was developed using 3D-printed components, which allowed us to rapidly change our design. The main structure is built from high quality PLA plastic, which is very light and cost-effective, essential in the prototyping stage. The tubing components are made from sterile, lab-grade silicone, ensuring compatibility within labs. For the control system, the Raspberry Pi touchscreen interface provides an intuitive user experience, while also keeping costs low.”

“While 3D printing is great for prototyping, we plan to transition to injection molded medical-grade polymers when we mass produce our subculturing device, as this device is more durable and is better for long-term lab use.”

“Our future improvements aren’t limited to just materials. We also want to develop a modular system that can scale up to handle multiple taks simultaneously, further enhancing the process by saving much more time. However, we know those improvements are later down the road, and just want to perfect one flask first before branching out.”

“What is our goal? To move from a single prototype to a scalable production-ready device that can fit into any lab in the modern day.”

**Market and business potential**

“We feel that automated cell subculture isn’t just an improvement on the process, it’s the future of biomedical research.”

“Our target market includes biotech startups, pharmaceutical companies and research institutions. All of these require efficient and reliable cell culture systems.”

“The global is rapidly growing and is worth around 18 billion dollars. However, a large portion of devices remain expensive and are therefore inaccessible for smaller companies.”

“That’s where we come in. As we said before, our device is affordable and very easy to use, and it bridges the gap between a full manual laboured subculturing and a high cost complex automated system.”

“Our business model is flexible. Revenue can be brought in via direct sales to labs looking to immediately integrate our product. We can also provide a subscription model for consumables and software upgrades, which ensures we get a recurring revenue.”

“We feel that by making automation more accessible, were not just improving workflows, but were unlocking the full potential of research by freeing scientists from boring, laboured tasks.”

**Closing statements**

“Outdated lab techniques slows research down. Our automated device is here to change that, by making research faster and more reliable.”

“Imagine a future where scientists focus entirely on breakthroughs, not boring work. Where cell culture is handed easily without contamination and no wasted time.”

“We built the prototype. Our technology works. Now, we need your support to take it to the next level. Whether you’re an investor, researcher or part of an institution looking to revolutionize your workspace, contact us. Were looking for partners to make this innovation worldwide.”

“Contact us at ….. for further information or investment opportunities. Lets automate the future of cell culture together. Thank you!”