Proposal

To: Eric Johnson, CEO
From: Trevor Andrus, Intern
Subject: Proposed Solution to Lab Accident
Date: February 9, 2021

My purpose in writing this proposal is to report on Microcore's internal investigation, to describe what I have learned through my video calls with employees, and to suggest a solution to prevent future incidents.

A recent incident involving the death of a pig earlier this week was caused by a faulty batch of nanobots. The news of this incident, while also causing distress internally within Microcore, caused the release of a few unsavory news articles, leading to a drop in Microcore stock temporarily. After my investigation, I am happy to report that the incident was an isolated one - caused by a breakdown in communication between departments, leading to the improper installation of cut-off switches on a batch of nanobots. I believe the issue here is gratefully not one of design flaw, but one of logistical short-coming.

Description of Lab Accident

A few days ago, during final trials before human testing, a batch of nanobots failed to stop reproducing, eventually causing the death of the pig they were being tested on. This failure to stop reproduction was identified as a fault in the cutoff switch (the part of the nanobot which ceases production). This fault was incurred during the production process, and only affected a select few nanobots. It seems that the breakdown in production was the result of the following two issues:

1. Unclear instructions for production process
2. Communication breakdown between departments

Problem 1: Unclear instructions for production process

The nanobots failed to stop replicating because of an improper installation of the cutoff switch. This installation failure was due mainly to ambiguous instructions given to the lab team. While a majority of the lab team was taught in-person about installation procedures, a new addition to the team was instructed only through the use of written procedures. These procedures were reviewed by Sarah, the technical writer for Microcore. Before Sarah submitted the instructions for final review, she noted the ambiguity of the step for cut-off switch installation (38b). She attempted to get in contact with Walter, the designer of the nanobots, but did not hear back from him. Unable to get a response, she published the procedures as they were (including the ambiguity she could not clarify).

This ambiguous step eventually lead Andy, the new addition to the lab team, to install the cut-off switches improperly - leading to the incident itself.

Problem 2: Communication Breakdown

The problem of communication is evident even in the description of the first problem. There is a serious lack of communication both between departments, and within teams at Microcore. If Walter had responded to Sarah's request for clarification, they could have remedied the ambiguity in step 38b. If step 38b had not been ambiguous, there may have been no incident at all. Similarly, If Andy had felt comfortable with communicating within his department, he could have asked for clarification when unsure about the installation process. His supervisor could have also made an effort to ensure Andy, as a newcomer, understood the installation process thoroughly.

The lack of dialogue between employees makes it extraordinarily difficult to streamline processes and prevent accidents such as the one we saw this week.

Objective

There must be changes made at Microcore to remedy these two problems and ensure that future incidents like this are prevented. In order to remedy these issues, Microcore must revise its production instructions for the nanobots, and improve communication between its employees. We will consider the problems improved when:

- The production instructions have been reviewed, edited, and republished
- An open dialogue is established and maintained between employees, including a new training program for new hires

Revise, Edit and Republish Production Instructions

In order to ensure mutual understanding between departments with regards to the manufacturing process, I propose that the instructions be rewritten with all parties in attendance. There seemed to be a breakdown in understanding during both the writing and interpretation of the production instructions. In order to remedy this, Sarah, Walter, and the lab team will all meet to review and revise the procedures. Walter will take the lead in description, Sarah will take the lead in composition, and all lab members must be in agreement that the procedures are unambiguous.

Sarah and Walter will first meet together to review the existing procedures and clarify anything that they deem ambiguous. After this first revision, they will meet with the rest of the lab team and go step by step through the process. The lab team will then demonstrate the process as described by the instructions to ensure the written process properly describes the physical action of assembly. Once these instructions are agreed upon and reviewed, they will be moved into publication.

By reviewing instructions and confirming with lab technicians, we can ensure that all steps of the process are easily understood and executed. This will prevent incorrect installation of cut-off switches going forward, greatly reducing the chances of reproduction failure.

Improve Communication and Training Procedures

In order to further prevent misunderstandings, group meetings will be held between departments to build community and familiarity between employees. Short weekly meetings will be held to discuss parts of the nanobot production process that can be improved. During these meetings, employees will introduce themselves and perform short team bonding activities to increase familiarity. These weekly meetings will also provide an opportunity for face-to-face communication – preventing situations like Sarah's emails that were left unanswered.

Similarly, I propose a new training procedure for team additions to eliminate all possibility of misunderstanding. This training procedure, which will be developed within each department, will be created in part by the newest member hired. This new hire will make note of the things they wish they had learned during their first weeks and incorporate them into the new training program. When a new employee is hired, they will be trained by both the second most recent hire and the supervisor to ensure nothing is overlooked. Through this new training program, we can make sure that no space exists for misunderstanding, preventing feelings of inadequacy that may contribute to poor performance.

Action Plan

The following plan will be enacted to ensure the previous changes will be implemented.

Task	Assigned to:	Checked by:	Time required
Review and rewrite production process	Walter, Sarah, Lab Technicians	Lab Technicians	15 work hours
Weekly Meetings	All involved parties	Eric	30 minutes per week
Create new Training process	Lead by Andy, assigned to Lab Team	Andy, Eric	30 work hours

Though requiring time initially, these precautions will contribute to the future of the company by ensuring misunderstandings between departments no longer cause incidents such as the one we recently experienced. The 15 hours devoted to rewriting the production process is proposed as an upper limit – it may not take this long to complete, but significant time should be spent on ensuring clarity. Similarly, weekly meetings are not necessarily required to be 30 minutes, but adequate time should be devoted to developing relations between individuals. The 30 hours allocated to the new training program includes both the development and implementation of said program.

Future Applications

While these solutions serve primarily to fix the current pig incident, they will also have invaluable future applications. With improved communication will come increased efficiency, and after the production process instructions are solidified and improved, expanding lab teams will also become significantly easier.