Problem Statement Worksheet (Hypothesis Formation)

How to reduce the failure rate to below 5% by identifying the manufacturing systems, parts supplier, or both that are causing this failure or it could be specific to one factory. We can do it in 24 hours since we have the Excel data from Cert.

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1 Context

You have been staffed on the Manufacturing Analytics team; in particular, you will be working on the manufacturingprocess for InSense energy tracking sensor, NSC's newest offering in the residential energy usage space.
In early-stage development testing, about 1-2% failure rate was normal for manufacturing the InSense sensor. As you can see from your supervisor, Vince, has provided you with an email introduction to the problem and included a forwarded message from the VP of InSense communicating the current sensor failure rate is 15% as well as more details about the data you have available. As you can imagine, the cause of increased failures could be due to a combination of faulty parts and poor manufacturing, or it could be specific to one factory. Or both The company needs to know which manufacturer to shutdown or parts supplier to stop buying from in order to get the failure rate back down below 5%. T

2 Criteria for success

Reduce the failure rate to below 5% by identifying the manufacturing systems, parts supplier, or both that are causing this failure or it could be specific to one factory wich we need to identify

H D E I P

3 Scope of solution space

We will find the problem in Singapore group in the March summaries where the majorities of defect occurs

4 Constraints within solution space

Column labels have vendor codes since we have multiple suppliers for each part to diversify our supply chain. We need to identify real vendor name,part or factory

5 Stakeholders to provide key insight

Shane Buchholz- Head Eng
Gary Neumont -Head of manufacturing
Jesica Jones QA/QC Eng

Otto Evans – InSense President
Tony Abraham – Insense VP

6 Key data sources

Data from Cert (I hope Excel format is ok). The system limits exports, so this only has 20k rows. You can tell which drives failed by the column titled "STATUS" (Fail rate was about 15% on these sensors).
The data covers manufacturing dates going back two quarters with dated results for testing. Additionally, you can connect the parts suppliers and manufacturer to each InSense sensor and whether it failed on testing.