

Problem Statement Worksheet (Hypothesis Formation)

Which factories does Nording Sensor Company need to shut down or which parts suppliers does Nording Sensor Company need to no longer purchase parts from in order to reduce the InSense Sensor failure rate to 5% by the end of the month?

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1 Context

Nordic Sensor Company's newest residential energy usage tracking sensor, InSense, had a pre-production failure rate of 1%-2%. The failure rate has spiked to 15%. NSC needs to identify which of their four factories to shutdown, or which parts suppliers to no longer purchase from in order to reduce the InSense failure rate to 5% by the end of the month. Time is of the essence since NSC has three accounts with massive pre-orders placed, and the factories produce a sensor every 30 minutes.

2 Criteria for success

- InSense failure rates will reduce from 15% to 5% by the end of the month.

3 Scope of solution space

- Determine which factory has the highest failure rate for the InSense sensors they produce
- Determine which suppliers are used at factories with highest sponsor failure rates
- Determine which suppliers have the highest failure rates between all four factories cumulatively

4 Constraints within solution space

- Each factory produces one sensor every 30 minutes, with the current failure rate of 15%.
- Low interest from OEM partners.
- Large pre-orders from key accounts could have slower fulfillment rates if factories are shut down or parts are not available.

5 Stakeholders to provide key insight

- Vince Maccano - Head of Data Science
- Tony Abraham - InSense VP
- Karen Chu - LithBat President
- Shane Bucholz - Head Engineer
- Gary Neumont - Head of Manufacturing
- Jessica Jones - QA/QC Engineer

6 Key data sources

- Cert - Excel sheet containing the previous two quarters sensor testing dates and testing status, in connection with the parts supplier and manufacturer.

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