Problem Statement:

What data models can help identify which of Nordic Sensing's four manufacturers or 26 parts suppliers is the primary cause for the 15% failure rate?

Context:

Nordic Sensing Company (NSC) is a top-five company in the IoT sensor space, focusing on energy consumption and production. The company manufactures the InSense energy tracking sensor for residential use. During development and testing of the InSense sensor, normal failure rates were 1-2%. The failure rates have, since, increased to 15%. NSC has four factories in Asia that are solely manufacturing InSense, and with massive orders to fulfill, it is crucial that the manufacturer or parts supplier that causes the failure rates to rise is identified so that the issue can be addressed immediately. Testing data has been provided for the past two quarters.

Decision Makers/Stakeholders:

- Tony Abraham (InSense VP)
- Vince Maccano (Head of Data Science)
- Shane Buchholz (Head Engineer)
- Gary Neumont (Head of Manufacturing)

Success Criteria:

Building a data model that identifies the primary manufacturer/parts supplier based on data provided by the client that causes the failure rate to increase from 1-2% to 15% and presenting that model to technical and non-technical stakeholders..

Scope of solution:

Building a model that compares the data to help identify which parts/manufacturers are most likely to cause a testing failure.

Constraints:

- Minimal data accessible (only from last two quarters)
- Will need to explain method and findings to non-technical stakeholders

Data sources/Systems:

- Python (Pandas, Numpy to sort, analyze and compare data)
- Shell