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Leveraging emerging technologies to transform your business.

A U.S. manufacturing plant had higher amounts of scrap then they desired. A complicated manufacturing process meant it was hard to determine what variations in material, pressure, and temperature were causing the imperfections.

Despite some initial cloud restrictions they had, they wanted to see if predictive machine learning could help them reduce scrap.
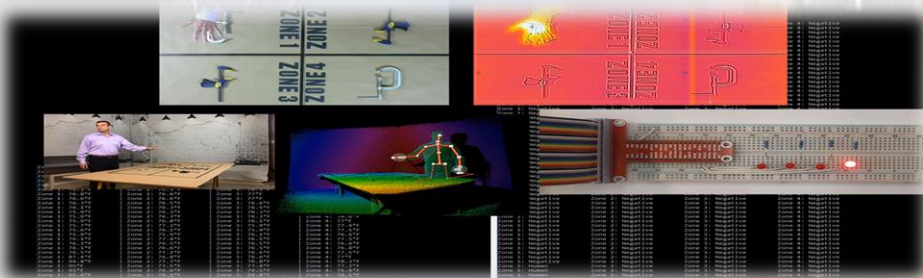
Solution: 80 Hour Discovery Using Azure Machine Learning to Gain Insights

During this 80 hour discovery, System One Digital experts will spend time walking your manufacturing plant, acquiring and analyzing data to enable our team to build a preliminary Azure machine learning model customized to your individual manufacturing processes. The time spent enables System One Digital to summarize a return on investment and demonstrate how Azure technologies can be used before kicking off an IoT / Artificial Intelligence project.

Why use such a solution?

- Improve Safety
- Improve Quality
- Reduce Cycle Times
- Reduce / Avoid Costs

Increasing Profitability

- Produces results quickly (prototype can be delivered as quickly as 3 days).
- Solves seemingly insurmountable problems.

2% reduction in scrap on use case – equates to millions in savings.

Advantageous Transformation

- Specializes in evaluating, prototyping and piloting the most relevant emerging technologies.
- Gains key insights leveraging big data to drive actions.

Able to predict scrapping of product with 85% accuracy.

Accelerating Competitiveness

- Generates quantifiable cost savings and avoidance.
- Increases quality, predictability and consistency for repeatable processes.

6-7% increase in yield on use case.

With the right use case (after discovery was conducted), the customer went from "don't even mention it" to "this is fantastic and you're saving us a ton of money."

- Armstrong Flooring

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IoT Discovery:

System One Digital will invest in our customers by completing an 80-hour onsite Internet of Things (IoT) discovery to identify areas of opportunity and summarize a return on investment to kickoff an IoT / Artificial Intelligence (AI) project.

INTERNET OF THINGS
CUSTOMER ENGAGEMENT PROCESS

EARLY DISCOVERY
We walk-through your plant or operation so that we can build process maps and identify all data inputs.

ANALYZE DATA
Format and remove irrelevant data. Remove outliers and correlate remaining data.

SHOW OPPORTUNITY
Show areas of opportunity based on the predictive model. Summarize Return on Investment.

ACQUIRE DATA
Pull historical data sets based on identified inputs and operational insights.

BUILD MODEL
Leverage machine learning technology to create the best algorithm. Publish predictive model.

STATEMENT OF WORK
Mutual agreement of identified opportunity and discuss SOW.

Using Azure Synapse Analytics to reduce scrap to customer's desired threshold

Azure IoT Hub

- Consolidates sensor data from an on-premises system.

Azure Stream Analytics and Machine Learning

- Azure Stream Analytics formats data for storage and passes it to Azure Machine Learning.
- Azure Machine Learning is used for prediction modeling.

Power BI

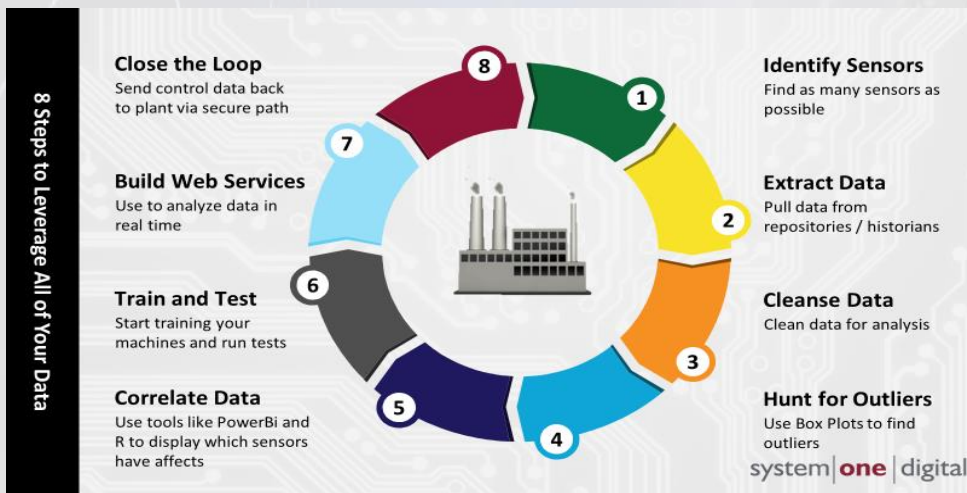- Displays real-time production dashboards of sensor data and live prediction results to operators.

80 Hour Azure Machine Learning Discovery

Our promise to you:

System One Digital will summarize a return on investment and demonstrate how Azure technologies can be used before kicking off an IoT / Artificial Intelligence project.

An offer to get you started:

System One Digital experts will spend time walking your manufacturing plant, acquiring and analyzing data to enable our team to build a preliminary Azure machine learning model customized to your individual manufacturing processes.

8 Steps to Leverage All of Your Data

Close the Loop
Send control data back to plant via secure path

Build Web Services
Use to analyze data in real time

Train and Test
Start training your machines and run tests

Correlate Data
Use tools like PowerBi and R to display which sensors have affects

Identify Sensors
Find as many sensors as possible

Extract Data
Pull data from repositories / historians

Cleanse Data
Clean data for analysis

Hunt for Outliers
Use Box Plots to find outliers

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Tangible Benefits / Desired Outcomes

- 2% reduction in scrap to desired threshold on use case – equates to millions in savings.
- Able to predict scrapping of product with 85% accuracy.
- 6 – 7% increase in yield on use case.

Why System One Digital?

- Trusted partner with National reach and Global capabilities. Your single source capacity for any size, scope or location.
- Specialty is manufacturing.
- Diverse team – heavily engineering focused.
- Expertise in process mapping / big data analytics / AI – visual classification and object detection / IoT and Machine Learning

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