Improving Cycle Time in Vehicle Assembly and Fulfillment Using IoT
SPEAKER PROFILE

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MAHINDRA PROFILE

• Mahindra NA is linked to a strong global brand and origins.

• The Mahindra Group founded in 1945 as a steel trading company in Mumbai, India.

• Expanded into many sectors from Automobiles & Tractors to I.T. & Financial Services

• Today: $19 B Revenue, 100+ Countries, 10 Sectors, 200,000 Employees
MAHINDRA NORTH AMERICA

In 1994, Mahindra USA was formed in Tomball, Texas, expanding M&M’s global reach to a key market:

• World’s #1 selling tractor in 2010
• #3 in market share in 0<120 PTO HP in US
• Side-by-side utility vehicles launched 2015
• Serves the market with 8 Distribution Centers in US, Canada, Mexico
BUSINESS CHALLENGES

Visibility into Inventory within & between facilities

Bottlenecks in Supply Chain due to Delays in each phase

High Operational Costs affecting Bottom lines

Footprint & Campus layout for storage and serialization

Material Requirement Planning
INCUBATING ANTIFRAGILE SUPPLY CHAINS WITH BRISTLECONETM

Decision Science

Internet of Things

Blockchain

Conversational UI

Intelligent Automation
OUR APPROACH

Where are my Assets?
One of the prime imperatives of any supply chain is to be able to track and trace the assets across the supply chain. Complex Joints in your supply network with globalization mean that you need to be able to locate every asset in real time. You need to have transparency at your supplier location, within your manufacturing or distribution network.

5 STEP DESIGN THINKING APPROACH

- EMPATHIZE
  Site Visit & User interviews

- DEFINE
  POV
  Technical & financial feasibility

- Deployment
  Deploy Edge Components

- RUN PILOT
  Commission the Application

- Pilot Analysis
  Pilot Results & Cost benefit Analysis

PROBLEM DEFINITION (1 week)
PILOT DEPLOYMENT (2 weeks)
PILOT RUN (8-12 weeks)
Our present layout and the process at Houston campus
USE CASE
Visibility of High-value asset movements on shop floor like engines, tractors and attachments (loaders, backhoes, mowers)

PROBLEM TO SOLVE
Inventory/Part visibility issue in the warehouse at the assembly line plant

CONNECTED ASSETS

- Docking Station
  - Position sensor at dock tracks pallet through shipment. Sensor tags on pallet is bound to barcode shipping label on part.
  - Visual/audio aid to identify the part when message is initiated from Mobile phone

- Strategically positioned Sensors with fixed location coordinates to triangulate the position of Pallet with tag sensor
- IoT Gateways with defined Zones to collect data from a set of Sensors and Tags and upload it to cloud

Mahindra
Internet of Things enabled in weeks, reduce your IoE adoption cycle from months to days!

100% visibility & insights on inventory counts, product mix and incident reporting

Completely scalable solution to our B2B network, which shall be integrated with S&OP for inventory tracking across distribution network
ROAD AHEAD

Bristlecone IoE edge Solution
- Trucks
- Engines
- Machines
- Sensors
- Vehicle Kits.

Mahindra USA Business Solutions
- Live Monitoring
- Diagnostics Services
- Mobility app
- Customer Portal

SAP Connected Assets
- Inbound Messaging Services
- Domain-specific Analytic Services
- Masterdata & User Management Services

Leonardo Connected Assets

SAP Cloud Platform

Based on SAP and non-SAP

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Any questions?