

# Automating Enterprise Asset Management Using a New Business Model

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### **Asset Management Evolution**

Enables New Services and Business Models As It Matures

2011 German Government Project

Promoted Computerization
of Manufacturing
to Make It
More Competitive

**Started Industry 4.0** 

Considered Next Stage
of Automating
Manufacturing &
Industrial Processes

Ultimate Process
Transformation Goal

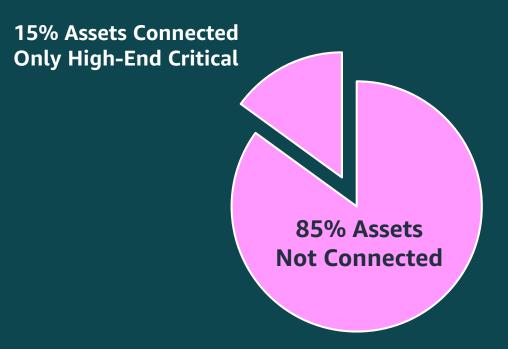
Create End-to-End
Information Streams of
Operational Intelligence
Across a Value Chain

# Industry 4.0 Adoption in Asset Intensive Industries

IoT Has Proven More Challenging for Machine Health Management

#### **Limited Scale of Adoption**

- Vast Majority Assets Not Connected
- Still Rely on Manual Inspections
- Lack Real Time Data Visibility
   Across Asset Ecosystem



Companies Struggle to Move from Pilots to Capture Value at Scale

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# **Operational Factors Preventing Adoption**

- 1 Interoperability Multi Vendor Solutions
- (2) Reliance on Expensive Experts
- 3 Long Time to Value
- (4) Organizational Change Management

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# Pandemic Catalyst for Adoption Acceleration

#### **Market Shaping Force**

- To Optimize Operations
- Make Asset & People Management More Efficient

#### **Technology Advances**

- Makes Affordable Technology Possible
- Enables Deployment at Scale

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# **Technology Advances**

#### **Hardware**

Sensors

Extended Battery Life

Computing Fast Enough

tinyML Computing at Edge Combines AI & Smart Device

#### **Software**

Deep Learning, Self-Supervised AI

- Analyzes Data Based What
  Already Knows + Inference from
  New Data
- Trains Computers Without Labeled Data
- Eliminates Need for Historical Data & Data Scientists

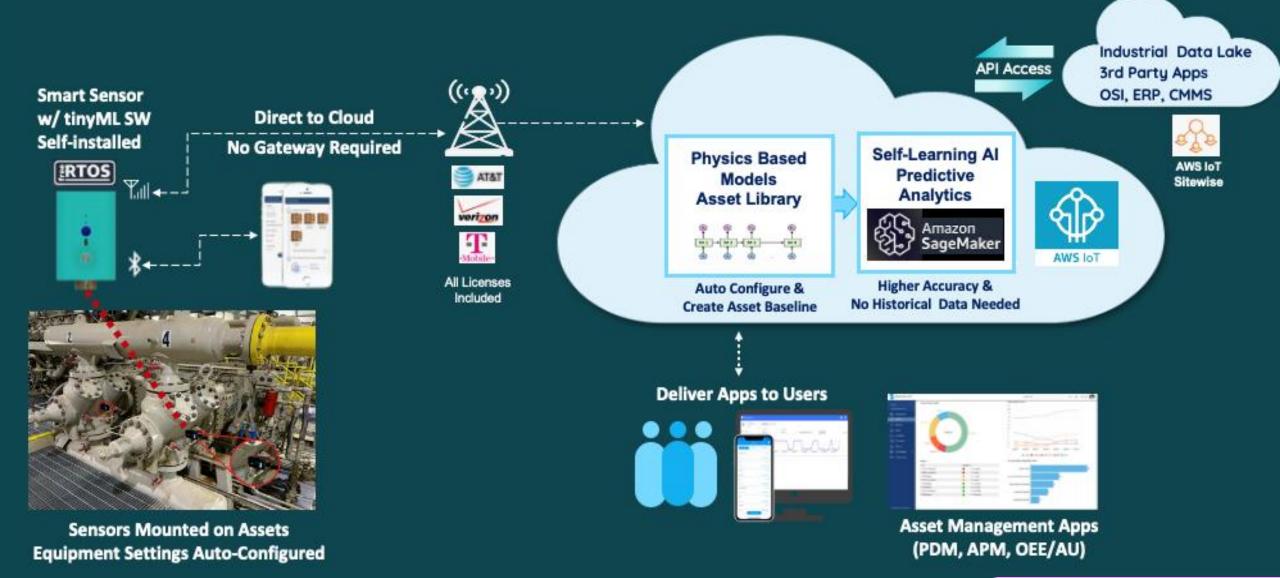


# Created New Business Model to Completely Automate Machine Health Management Across Operational Ecosystems

Delivers First "Out-of-Box" Solution To Address Adoption Barriers

- Easy-to-Use
  Built Non-Experts
- 2 Affordable All Assets
- Highly Scalable

# Fully Automated, Single Stop Solution

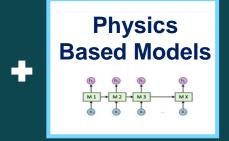


# Transforms Asset Management in Minutes

From Sensor Installation to Actionable Insights in Minutes Without Any Experts, IT or System Integrators











#### Step 1

Completely Automate
Machine Health
Management



#### Step 2

Enable & Share Real-Time Intelligence Across Operational Ecosystems

#### Outcome

Unprecedented Process Performance Visibility

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# Shoreline Solution



Built Top to Bottom with AWS Services



Connectivity



Processor

#### **Shoreline Cloud Architecture Using AWS Services CRM OSIsoft CMMS** React Native **Shoreline IoT Integrations Services** aws FW Mgmt (OTA) **Device Mgmt User Mgmt Subscription Mgmt Shoreline IoT Shoreline IoT Profile Mgmt Rules Engine Org Mgmt Device Diagnostics Amazon CloudFront Applications VPC** Sync Asset Models, Assets, Asset Data, Alarms **CBM** <u>₩</u> ₩ ₩ Amazon **Amazon** SageMaker **API Gateway PDM AWS IoT SiteWise** Collect Model Monitor **APM** AWS Lambda IoT sensor **AWS IoT rule AWS IoT Core IoT MQTT protocol** FreeRTOS SDK OEE Amazon ElastiCache **Amazon S3 Amazon Aurora Life Cycle Mgmt** ₹₹ <u></u> Common Services **Amazon CloudWatch AWS CloudFormation Amazon SNS Amazon Cognito AWS CloudTrail**

#### Shoreline "Out of Box" Solution

Built for Non-Experts to Set-Up & Manage





Asset
Automatically
Configured in
Cloud



Automatic Baseline Generated from Physics Based Models



Automated AI/ML Analytics Self-Supervised Deep Learning Plug-n-Play

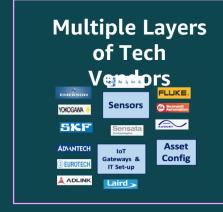
**Affordable** 

Easy-to-Use

**Highly Scalable** 

### **Industry 4.0 Asset Management Solutions Today**

Built for Experts to Set-Up & Manage



System Integrators Required at Every



Multiple Standard



Complex

**Expensive** 

**Requires Experts** 

**Not Scalable** 

# **Unique Features**

1)

AI Sensor with Proprietary SW tinyML Analytics at Edge & 5 Year Battery life

3

Direct Sensor to Cloud Connectivity No New IT Infrastructure

5

Self-Supervised, Deep Learning Al No Historical Data

2

DIY Setup Software for Non-Experts In Minutes with Mobile App

4

Physics Based Models Library Creates & Auto Configures Machine Baseline

6

Affordability
10x Less Than Current Solutions

Delivered with Zero Capex, All Inclusive 100% SaaS Subscription

### **Significant Benefits for Asset Intensive Enterprises**

Easy to Manage

Easy to Use

Deep Business Insights Faster Time to Market

Asset Data Availability

Low Cost for All Assets

**Leading Enterprises Deploying Our Solution** 













# It's Quick & Easy to Get Started

Deliver Fast Time to Value



#### Shoreline Machine Health Management Starter Kits

Order Online

Ready To Be Shipped



# Solution Demo



# Thank you!