# REDLIST®

Enterprise Asset

Management

Solutions

# ARTHA WEARTECH

The Role of AI with

Predictive Maintenance and Lubrication

# Introductions

**Dallen K. Davenport**

Senior Success Manager, Redlist

in  linkedin.com/in/dallen-davenport-9718b463

✉  Dallen.davenport@getredlist.com

**Rich FitzHarris**

Global Director Strategic Relationships, CHE, MBA, SME Artha Wear-Tech

in  linkedin.com/in/richard-james-fitzharris-che-mba-3b84057

✉  rich.fitzharris@thinkartha.com

**Logan Stinger**

Chief Technology Officer, Redlist

in  linkedin.com/in/loganstinger

✉  Logan.Stinger@getredlist.com

**Charles Yerkes**

Business Solutions Manager SME Lubrication, Artha Wear-Tech

in  linkedin.com/in/charlesyerkes

✉  Charles.yerkes@artha-weartech.com

**REDLIST**  **ARTHA WEARTECH**

# Agenda

- **Introductions**
- **AI and the Industry Shift**
- **Redlist's role with AI**
- **How to Enhance Data Management through AI**
- **Q&A**
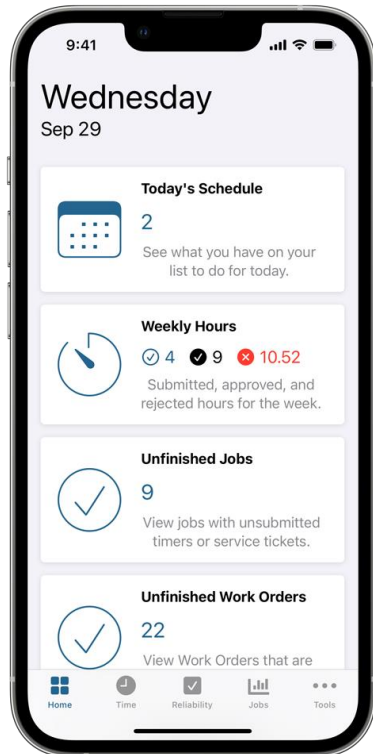
Placeholder: Include how much time to expect for presentation versus Q&A

**REDLIST**

ARTHA WEARTECH

# How can AI Unlock the Steel Industry's Full Potential?

**Recent advancements happening right now in the industry:**

Key Areas:

- **Smart Sensors** – Collect data and discover patterns with AI about every aspect of the steel process and condition of equipment.

- **Operations & Maintenance Tasks** – AI can help reduce expensive problems by unveiling previously hidden trends that improve predictive maintenance and equipment health.

- **Quality Control** – Is improved as equipment is improved with analyzing huge amounts of data.

REDLIST

ARTHA WEARTECH

Canvas.ai - How AI is Transforming the Steel Industry

# AI Results
# for Steel Companies
# in 2 Key Global Markets

**Connecting Assets through Data and Generating Insights with**

**AI helps companies to potentially achieve the following results:**

- Reduce raw material input costs by more than 5%

- Improve bottlenecks by more than 6%

- Increase end-to-end product yields by more than 15%

Canvas.ai - How AI is Transforming the Steel Industry

**REDLIST**

**ARTHA WEARTECH**

# **AI** Data Driven Predictive Maintenace Transforming Pulp and Paper Industry

## Impacts outcomes with using AI

- AI is shifting pulp and paper into smart manufacturing to digest massive amounts of insights on thousands of pieces of equipment, saving thousands of man hours, removing human error.

- Enabling a facility to operate with real-time equipment condition data to take corrective action immediately before it's too late.

- Detect anomalies quickly and predict maintenance needs based off equipment performance, improving collaboration between operations and maintenance to detect equipment failure before it occurs

**REDLIST** **WARTHA WEARTECH**

# AI Data Driven Predictive Maintenace Transforming Pulp and Paper Industry

**Impacts outcomes with using AI**

- AI is shifting pulp and paper into smart manufacturing to digest massive amounts of insights on thousands of pieces of equipment, saving thousands of man hours, removing human error.

- Enabling a facility to operate with real-time equipment condition data to take corrective action immediately before it's too late.

- Detect anomalies quickly and predict maintenance needs based off equipment performance, improving collaboration between operations and maintenance to detect equipment failure before it occurs

**REDLIST**

**ARTHA WEARTECH**

# The ultimate level of Maintenance with **AI** for Mining

## Impacts and the Need to Lean Into AI

- Preventative maintenance will help improve asset reliability but calendar based-maintenance alone often proves to still have inefficiencies. This is because 82% of machine failures occur at random patterns.

- Condition based monitoring and predictive maintenance models are a step forward in the right direction. However, the ultimate model of maintenance, prescriptive maintenance, involves big data, analytics, machine learning, and AI.

**REDLIST**

**ARTHA WEARTECH**

# Barrick Gold Prescriptive Maintenance Case Study

**Impacts**

- Barrick Gold saved $500,000 due to their new found ability to detect and quickly address failures

- They also reduced the number of failures from engine, brake, or suspsension issues by 30% through their prescriptive maintenance practices for quick turn-around

**"Now we can be one step ahead of a failure and be more proactive."**

Ted Olsen-Tank – Senior Metallurgist for Barrick Gold

REDLIST

ARTHA WEARTECH

Five Stages of Mining Maintenance with AI (mining.com)

# Introduction

Characterized by increasing automation and the employment of smart machines and smart factories, informed data helps to produce goods more efficiently and productively across the value chain



INDUSTRY 4.0

Automation | Big Data | Cloud computing | Autonomous | IOT | Data Management
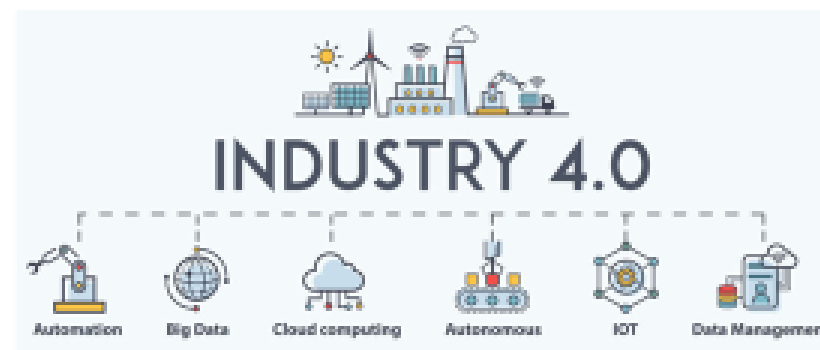
By collecting more data from the factory floor and combining that with other enterprise operational data, a smart factory can achieve information transparency and better decisions

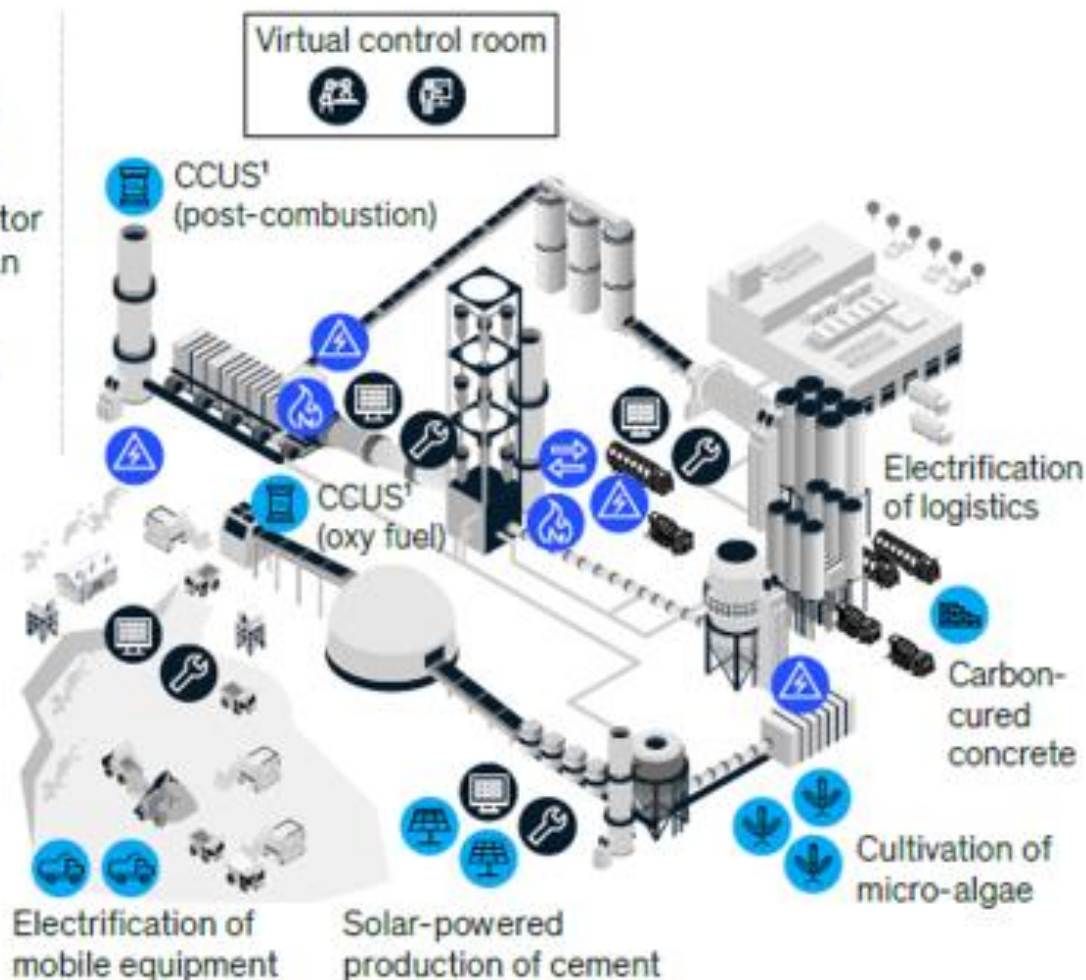| Automation | Big Data | Cloud Computing | Autonomous | IOT | Data Management |
|---|---|---|---|---|---|
| automation integrates AI, IoT, and robotics for smarter, self-regulating processes. An example is a factory using AI-equipped robots that assemble products, detect and address issues, and order supplies autonomously, enhancing efficiency and adaptability while minimizing errors | Vast volume of data collected and analysed from connected devices and systems to make informed decisions. A smart manufacturing plant can use data from sensors to optimize production processes, predict maintenance needs, and minimize downtime, improving overall efficiency | Cloud computing involves using remote servers to store and process data, enabling real-time access and scalability. For instance, a manufacturing company can use cloud-based platforms to analyze production data from multiple locations, facilitating efficient decision-making and resource allocation | Autonomous systems operate independently with minimal human intervention. Autonomous robots on the production line can handle tasks like material handling, assembly, and quality control without human involvement, optimizing efficiency and reducing errors | Connecting and collecting data from physical objects and devices. In a smart factory, IoT sensors on machines and equipment can transmit real-time data to a central system, enabling predictive maintenance, optimizing energy usage, and improving overall production efficiency | Efficiently storing, processing, and securing the vast amount of data generated. For instance, a manufacturing plant uses data management systems to organize and analyze production data, allowing for real-time monitoring, predictive maintenance, and data-driven decision-making |

# The cement plant of the future integrates the latest proven digital and sustainability technologies and practices.

**ARTHA SOLUTIONS**

## Integrated digital twin of cement plant enabling steering and optimized operations from end to end



**Digital levers**
- Digital-asset optimization
- Digital-operator and technician journeys
- Digital-asset reliability
- End-to-end process automation

Virtual control room

CCUS[1] (post-combustion)

CCUS[1] (oxy fuel)

Electrification of logistics

Carbon-cured concrete

Cultivation of micro-algae

Electrification of mobile equipment

Solar-powered production of cement

**Traditional levers**
- Energy efficiency
- Clinker substitution
- Alternative fuels

**Innovation levers**
- New technologies: CCUS,[1] electrification, solar, etc
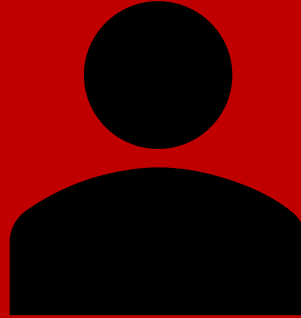- Alternative building materials

# The Maintenance Evolution Process

## Phases

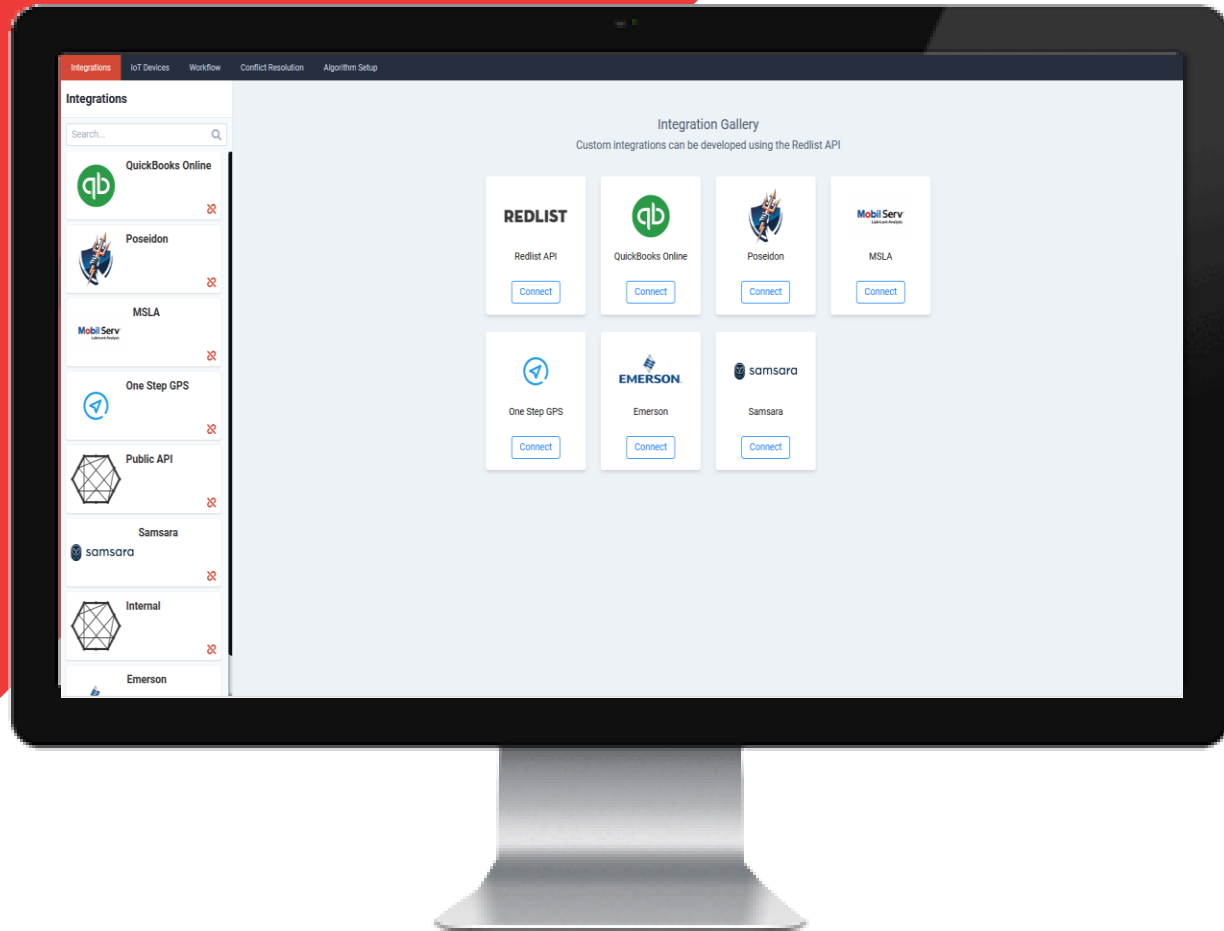| Reactive | Preventative | Condition-based | Predictive | Prescriptive |

**REDLIST** **ARTHA WEARTECH**

# The Last 10 Years...

| 380+ Installments | 6,700+ Users | 55 Million+ Actions |
|---|---|---|

REDLIST

DART

Cascades

AHLSTROM MUNKSJÖ
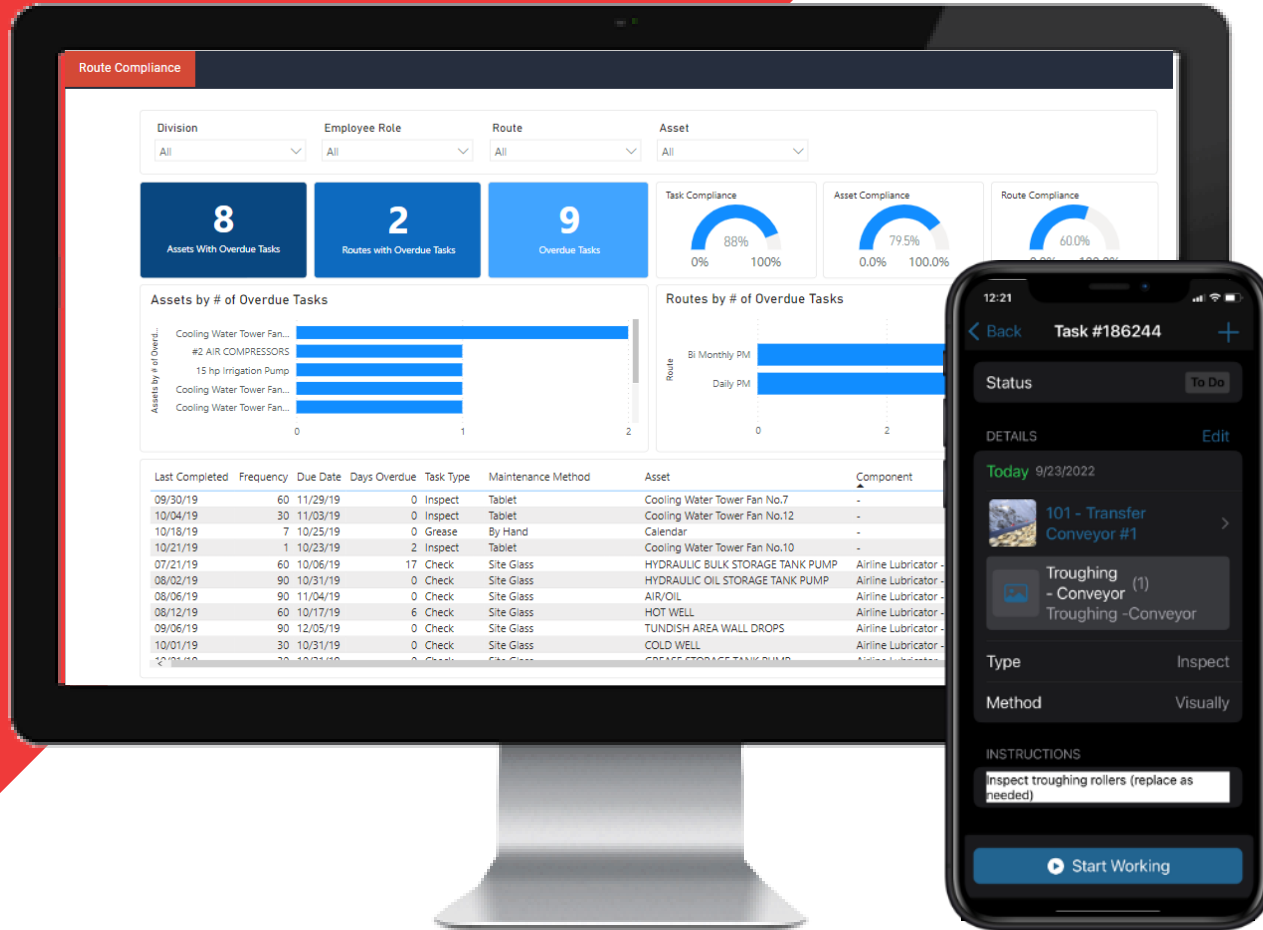
GP Georgia-Pacific

Lhoist

SDI Steel Dynamics, Inc.

# Connecting Critical Assets
## Sensors and Impactful Integrations

- Sensor Monitoring
- ERP Integrations
- Used Oil Analysis Integration

**Integrate Redlist to Sensors & Systems**

- API Access
- Oil Analysis
- Temperature Analysis
- Vibration Analysis
- Ultrasound Analysis
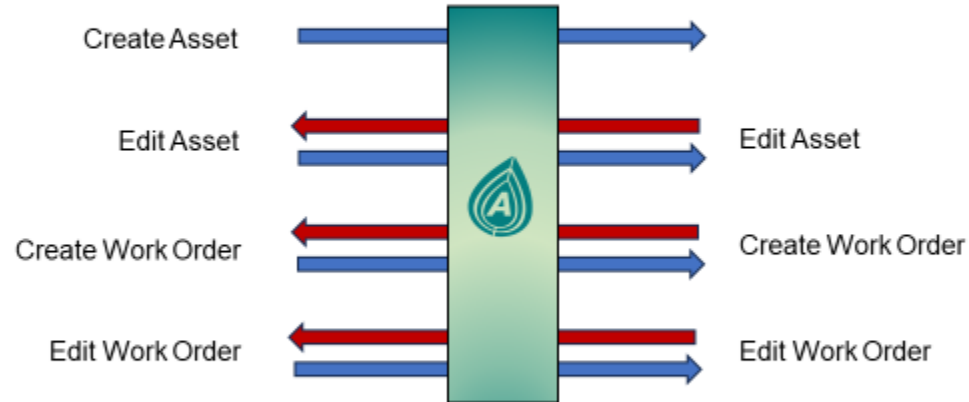
REDLIST    ARTHA WEARTECH

# Driven By Delivering
# Business Impact

- Maintenance Tasks, Scheduling and Management
- Custom Forms
- Operations Efficiency
- Inventory Management
- LOTO and other Safety Critical Processes
- Workforce Management
- Employee Qualifications
- Configurable Reporting Capabilities

REDLIST    ARTHA WEARTECH

# Who We Are?

**ARTHA WEARTECH**

**ARTHA SOLUTIONS**

ARTHA WEARTECH emerged as a beacon of innovation, founded by a visionary technocrats driven by a single purpose: to bridge the gap in delivering top-tier wear protection products & Asset Management Solutions

**Americas**
Scottsdale, Chicago
Satellite Office: Toronto

**India**
Hyderabad,
Bengaluru

**Asia**
Jakarta, Singapore
Other Locations of service:
Kuala Lumpur, Manila, Sydney

**talend Platinum partner**

**REDLIST** · **SCHAEFFLER** · **Microsoft** · **Azure** · **aws**

**amurta** DATA INSIGHTS PLATFORM · **snowflake** · **cloudera** · **KINAXIS** · **denodo**

**1**
Data Governance

**40+**
Customer 360, MDM Projects Implemented, Highest of any Talend partner

**250+**
Projects delivered across the globe

**50+**
Big Data, Data Lake, Cloud Implementations

**10+**
Customers Served from Fortune Global 100

**10+**
Offices and Satellite offices to service global clients

**10+**
Years of Data, Cloud & analytics experience

**300+**
Data Professionals, SME, Scientists, Specialists

# Services Portfolio

## Business Advisory & Execution Planning

**Strategy & Road Map Development**
**Program Management**
**User Adoption & Organizational Change**
**Management**

## Data Management

**Data Governance Definition & Implementation**
**Information Life Cycle Management**
**Data Warehousing & Data Migration**
**Data Replication & Data Security**
**Data Privacy & Big Data**
**Data Discovery**
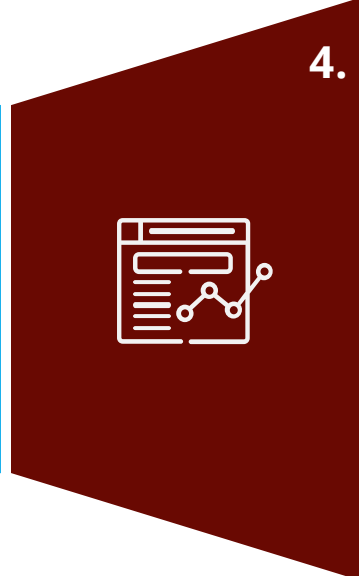
## Business Analytics

**Metrics, KPI Section & Executive Dashboard**
**Reporting Shared Services & Process Design**
**Data Visualization**
**Predictive Analytics & Business Intelligence**
**Mobile Intelligence & Cloud Intelligence**
**Performance Management**
**Big Data Analytics, Data Science**

**1.**  **2.**  **3.**  **4.**  **5.**  **6.**

## Information Management

**Data Quality Management**
**3rd Party Data Integration**
**Data Integration & Data Quality**
**Master Data & Meta Data Management**
**Data Exchange**
**Information Life Cycle Management**

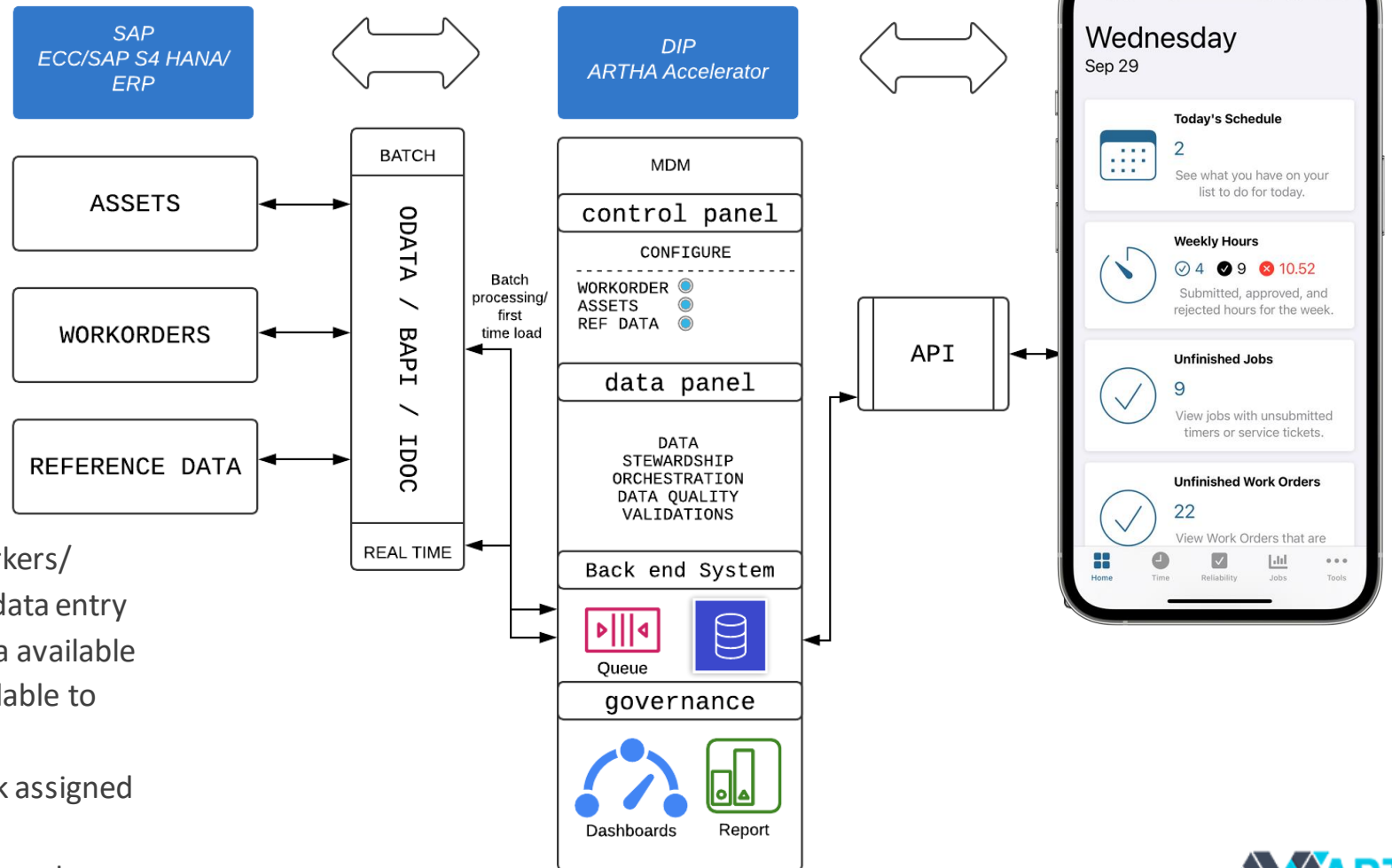## Full Lifecycle Implementation

**Technology Selection & Enterprise Architecture**
**System Integration & Full Life Cycle Application**
**Development**
**Quality Assurance**
**Build, Release & Deployment Support**

## Maintenance & Support

**Post-Production / On Going Support**
**Application Maintenance**
**Upgrade & Migration**

# Effortless Integration

## Integration Summary

### Delivering

- Reduction of duplicate data entry from field workers/ supervisors (CMMS and ERP) resulting in fewer data entry errors, richer data quality, quicker upstream data available for closer to real-time reporting, more time available to field workers
- Quicker communication to field workers on work assigned with tasks available on their mobile devices
- More accurate details around labor duration for work order costing

# Live Demo

REDLIST

ARTHA WEARTECH

# Metal Manufacturing Company Saves $209,070

**Situation**

A U.S.-based metal manufacturing company with a massive $25 million expansion, after only four years in business. Being in an asset-heavy industry and having 200 to 500 employees, the business growth required the company to expand its maintenance program as well. Their goals to support continued growth were to **reduce unplanned downtime and maintenance events** through improving their existing lubrication program.

**Impact**

Within their first month of implementation, the mine experienced excellent progress towards their initial goals. They identified and **repaired 66 major issues before catastrophic failure, which saved an estimated $165,000** in reduced equipment downtime. With all assets' lubrication tasks completed as scheduled, they save an additional $24,750 on replacement pumps, mixers, and bearings. They also have reduced their MTTR (Meantime to Repair) for non-catastrophic events **by 97%,** allowing them to get critical production assets back online and reduce downtime.

The improved maintenance program keeps everyone from the maintenance staff to management more organized, less stressed, and even creates a safer work environment. This is reflected in a $19,320 **savings in regulatory fines** in the first year of use due to improved recordkeeping, maintenance history tracking, and shortened repair times. **The total first 6 month savings for critical assets was $209,070**.

# Conclusion

➢ AI can help you get started whatever maintenance progression stage your team is in

➢ AI

➢ Bullet 3

THANK YOU

REDLIST

ARTHA WEARTECH

# Q&A