EFFICIENCY THROUGH CONNECTIVITY

PT Kalbe Morinaga Indonesia
MANUFACTURING FACILITY

Building (Land)
26,828 m²
(52,000 m²)

Production capacity
37,200 ton/year

Warehouse capacity
8,400 pallets

Number of Production Line
5 lines

Spray Drier
Powder Handling
Packing
Warehouse

LINE OF PRODUCT

PT. KALBE MORINAGA INDONESIA
Kawasan Industri Indotaisei Sektor 1A Blok Q,
Cikampek 41373, Karawang - Jawa Barat
Tel. (62-264) 350680
Fax (62-264) 350679
Provider of an integrated healthcare solution through its 4 business divisions:

- **Prescription Pharmaceutical Division (23% contribution)**
  - PT Kalbe Farma Tbk
  - PT Hexpharm Jaya Laboratories
  - PT Dankos Farma
  - PT Finusalprima
  - Kalbe Vision Pte Ltd
  - Innogene Kalbiotech Pte Ltd

- **Nutritionals Division (30% contribution)**
  - PT Sanghiang Perkasa
    - Kalbe Nutritional
  - PT Kalbe Morinaga Indonesia
  - PT Kalbe Milko Indonesia

- **Consumer Health Division (17% contribution)**
  - Kalbe OTC
  - PT Bintang Toedjoe
  - PT SakaFarma Lab
  - PT Hale International
  - Kalbe International Pte Ltd

- **Distribution and Logistics Division (30% contribution)**
  - PT Enseval Putra Megatrading Tbk
  - PT Enseval Medika Prima
  - PT Milenia Dharma Insani
  - PT Medika Komunikasi Teknologi (KlikDokter.com, klik-Apotek.com)
  - PT Karsa Lintas Buwana (KalbeStore.com)
  - PT Cakra Radha Mustika

Kalbe established in 1966
SMART FACTORY ROADMAP

2017
Concept Smart Factory

2018-2021
Plant Production System
3 Zero Chredo

2022-2025
ISC (Integrated Supply Chain)
IPS (Integrated Production System)
7 Zero Chredo

2026-2030
GSC (Global Supply Chain)
20 Zero Chredo

System & Culture

Community Dev

Cost Half

Cost Quarter

Ecosystem
SMART FACTORY ROADMAP

SMART FACTORY
PHASE 1

Automation Program
- Auto Work
- Auto DB
- Co Bot
- Auto Detect
- Expand Auto

Remote Monitoring
- Command C.
- Predictive M.
- Smart Tag

Big Data Analysis
- SC Optimization
- MES
- Augmented Advisor

Machine (Deep) Learning

Optimization Modelling

Intelligent

Analog Data
- Direct

Digital Data
- Predictive (Feedback)
### SMART FACTORY ROADMAP

#### COMMAND CENTER
- **TABLEAU**
- **ORACLE**
  - MES & MOM (Manufacturing Operation Management)
- **REAL TIME DASHBOARD**
- **SQL**

#### SCADA / CLOSE LOOP CONTROL
- **Field Level (Acquire)**
  - Excel
  - Manual Key In
  - RFID
  - Finger Print
  - NFC
- **Control Level (Utilize)**
  - Excel
  - Manual Key In
  - Tableau
  - ORACLE
  - BC/QR
- **Supervisory Level (Visualize)**
  - BC/QR
  - OPC
  - IoT
  - RFI
  - ModBus
  - Tableau
  - ORACLE
  - PLC
- **Management Level (Utilize)**
  - Camera Coding
  - Sensor
  - Manual Key In
  - Tableau
  - ORACLE
  - PLC
  - BC/QR
  - RFID
  - Tableau
  - ORACLE
  - PLC

#### HORIZONTAL INTEGRATION
- **Office Support & Administration**
- **PPC**
- **Preparation**
- **Quality Inspection**
- **Production**
- **Quarantine FG**
By this automation, all analog data will be transformed to digital data, so we can connect all the processes due to IR 4.0.
Automation
From Analog to Digital shop floor

Current Condition:
Access anywhere, anytime, anyone & any devices

SCADA Connect to Historian
(for comprehensive monitoring, ability to control by remote)

PLC Connect to SCADA

Device connect to PLC
**Automation**
From Analog to Digital shop floor

**Before**
Knowledge document not yet integrated on the machine

**After**
Knowledge document integrated on the machine by scanning the QR Code

**Before**
Display information less attractive

**After**
Display information more attractive & interactive
Data Mining
Direct Digital Data Predictive (Feedback)

Predictive Maintenance

Data Warehouse

WEG Vibration Sensor Topology
- Bluetooth Communication
- Gateway
- Smartphone
- Cloud
- Internet

Email Alert Notification (if it has some error/warning)

Real-time Monitoring by mobile App or Desktop

Transform Project
Advance Manufacturing
Collaborative Robot & Additive Manufacturing

Before
After

COBOT: Man and Robot work together with safety

Before
After

3D PRINTER: Rapid machine part manufacturing

Spare part on new machines have been made with 3D printer machines and are already in use
THANK YOU