



Process
People
Technology
Learning
Engaging
Transforming
Inspiring

EMBARKING INDUSTRI 4.0 JOURNEY INDOLAKTO

Wahyu Widodo
31 Okt 2019

Revolusi Industri 4.0



-18th Century

Industry 1.0

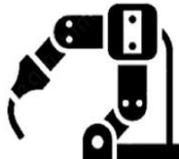
Mechanical production equipment powered by steam



19th Century

Industry 2.0

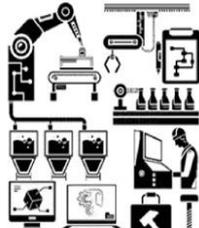
Mass production assembly lines requiring labour and electrical energy



20th Century

Industry 3.0

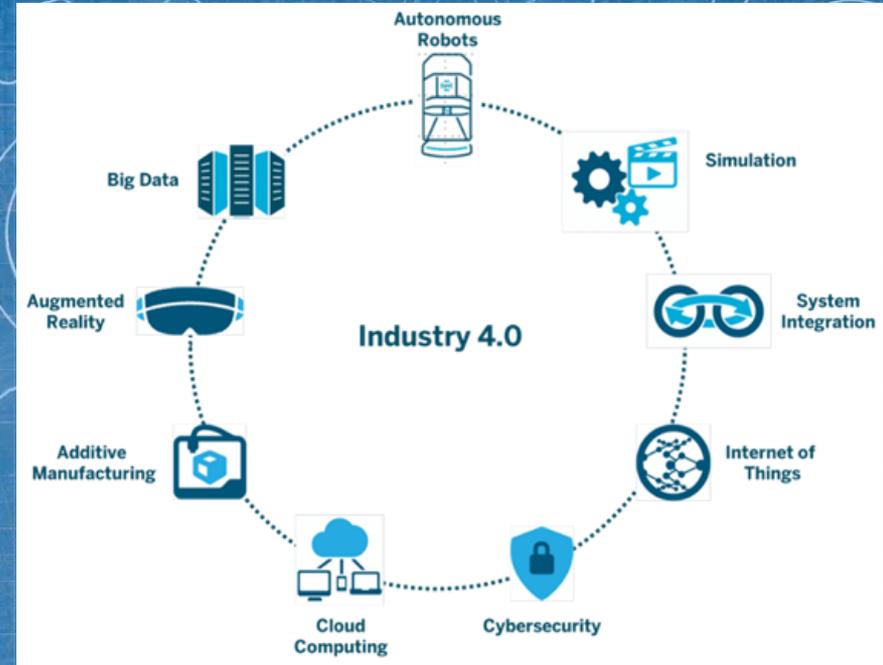
Automated production using electronics and IT



Today

Industry 4.0

Intelligent production incorporated with IoT, cloud technology & big data



MAKING INDOLAKTO 4.0

Making
Indolakto
4.0

SMART FACTORY

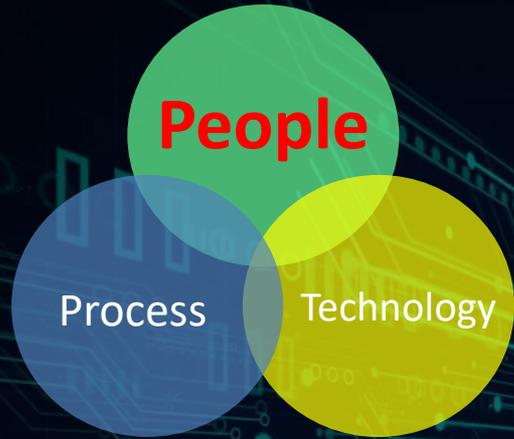
- ✓ *Smart Performance System*
- ✓ *Smart Quality System*
- ✓ *Smart Production System*
- ✓ *Smart Maintenance System*

Our Goal:

- ✓ **Improve Quality**
- ✓ **Increase OEE**
- ✓ **Cost Reduction**

Connected , Optimized, Transparent, Proactive , Agile

INDOLAKTO TOWARD SMART FACTORY



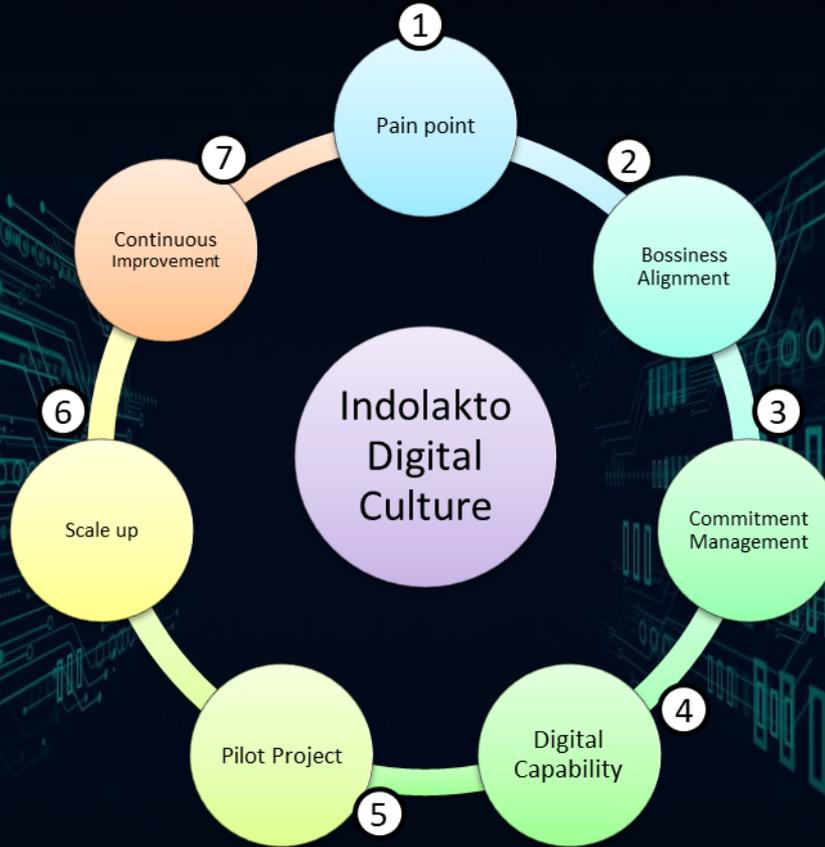
Key Element



Enabler



Technology



Step to Change

QUALITY 4.0

1. Connected
2. Optimize
3. Transparent
4. Proactive
5. Agile

Smart Factory

BUSINESS ALIGNMENT



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SK DIR
Continuous Improvement

**Fewer
Bigger
Bolder**

SURAT KEPUTUSAN DIREKSI PT INDOFOOD SUKSES MAKMUR Tbk	
Penerapan Sistem Perubahan Berkelanjutan (Continuous Improvement System)	
No.	SK-Dir ISM 037/BOOHRU/02011
Tanggal diterbitkan	1 April 2011
Tanggal mulai berlaku	1 April 2011
Kelompok kebijakan	Organisasi

Dasar Pertimbangan

1. Perusahaan menyadari akan pentingnya upaya dalam eliminasi berbagai jenis pemborosan pada seluruh proses bisnis kerja yang dilakukan secara berkelanjutan dan konsisten yang berkontribusi terhadap penghematan biaya (cost efficiency), peningkatan produktivitas dan profitabilitas, serta meningkatkan daya saing Perusahaan di masa yang akan datang.
2. Sistem Perubahan Berkelanjutan merupakan salah satu bentuk implementasi dari:
 - a. Core Values Indofood Group yang diatur pada SK Direksi No. SK-Dir ISM 029/BOOHRU/07/2011, khususnya pada nilai Excellence dan Innovative.
 - b. Nilai dan Misi Indofood Group yang diatur pada SK Direksi No. SK-Dir ISM 037/BOOHRU/07/2011, khususnya pada poin:
 - To continuously improve our people, processes and technologies
 - To continuously improve stakeholders' values

Tujuan

Menetapkan kebijakan yang mengatur tentang pelaksanaan Sistem Perubahan Berkelanjutan (Continuous Improvement System) di PT Indofood Sukses Makmur Tbk dan Anak Perusahaannya.

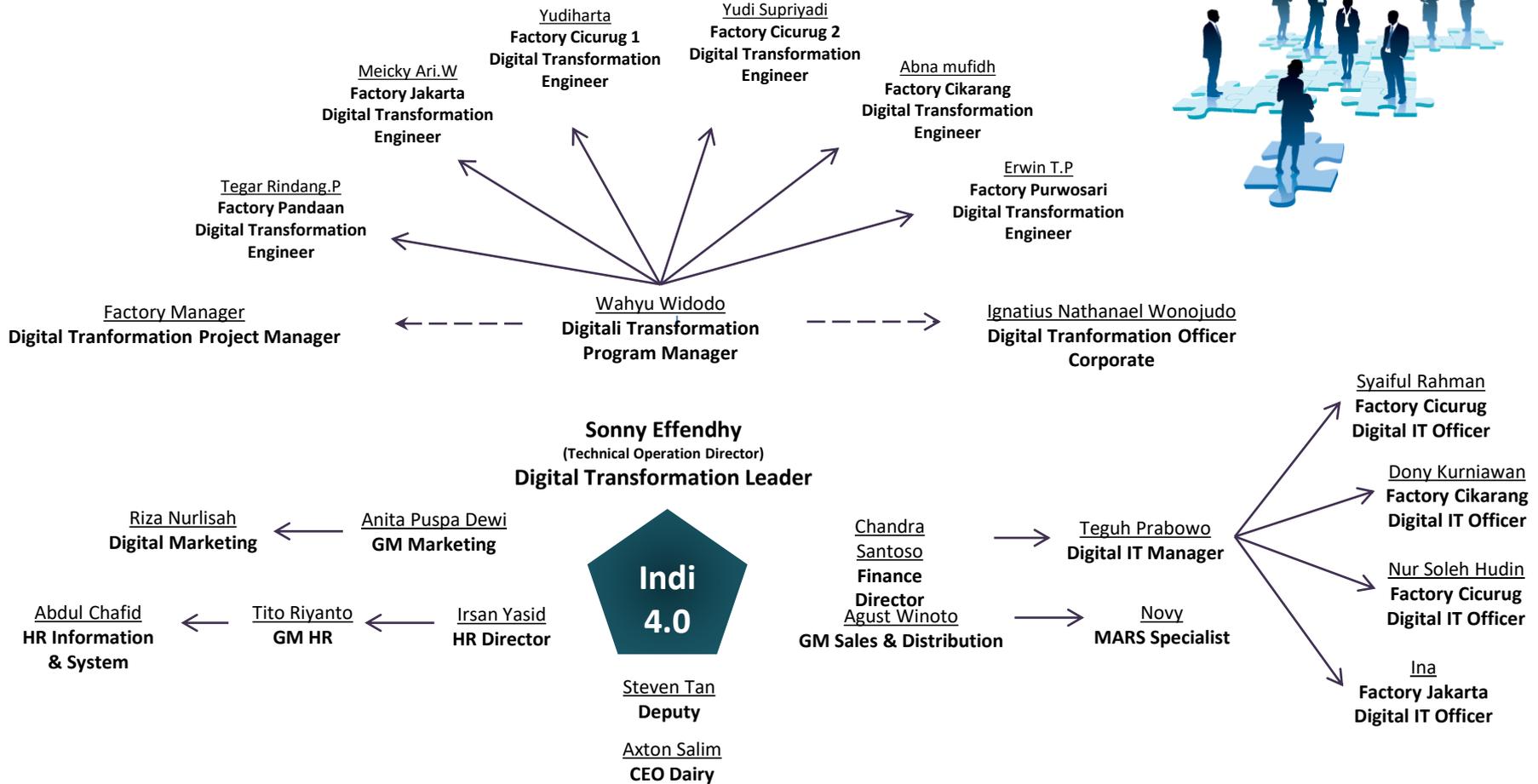
Pengertian dan Definisi

1. Sistem Perubahan Berkelanjutan merupakan sebuah filosofi dasar mengenai cara untuk mencapai standar kualitas yang optimal melalui beberapa langkah perubahan yang sistematis dan dilaksanakan secara berkesinambungan.
2. Kualitas yang dimaksud adalah kualitas sumber daya manusia sebagai pelaku perubahan, kualitas proses kerja dan kualitas

**Direction management
INDOLAKTO
To further the EXCELLENCE
with INNOVATION
AGM 12 – 14 Des 2018**



DIGITAL TRANSFORMATION TEAM



INDOLAKTO TRANSFORMATION



Innovation Culture



Problem Solving Competition is the stage of empowerment and engagement people in the shop floor Automation and digitalization for improve the line - Bottom Up

Indolakto Management on the move

Technology Day



Innovation Day



Improve Digital Capability



DIGITAL TRANSFORMATION ROADMAP

Pilot Smart Factory (2019)

- a. Smart Production System
- b. Smart Quality System
- c. Smart Inventory System
- d. Smart Maintenance System

2019

PHASE 1 Pilot Project Smart Factory

1. Management commitment & team engagement

Pandaan MES – SAP with Internal Resources

Purwosari:

- ASRS
- RGV
- MES UHT & SCI
- Condition base maintenance

2. Real time android apps untuk Sales

2020

Scale up

Launches smart factory to all unit
Encourage Digital Mindset

2021

Phase 2

Connected all factory

Big data with Cloud, IOS
Smart Product

2022

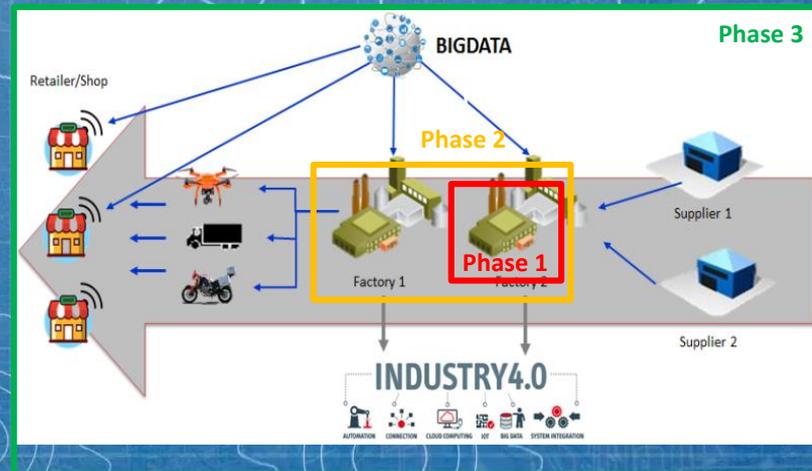
Phase 3

Digital Supply Chain

Block chain

2023

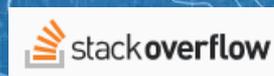
New Business Mode
Omni channel distribution
Embedded System
Share products



PANDAAN DIGITAL TEAM (CASE STUDY)

Transformation Team (Internal)

- ✓ E learning
- ✓ Program Developer
- ✓ MES
- ✓ Enabled display & control Mobil Production Report



Program Created by Ladi N.

- ✓ Asset Management system



Program Created by Mr. Abdi

- ✓ Absence
- ✓ Chart Autoclave monitoring
- ✓ Weighing Formula
- ✓ Data Production Check
- ✓ Production Dashboard
- ✓ Filling Packing Area
- ✓ Formulation
- ✓ Monitoring Fresh Milk

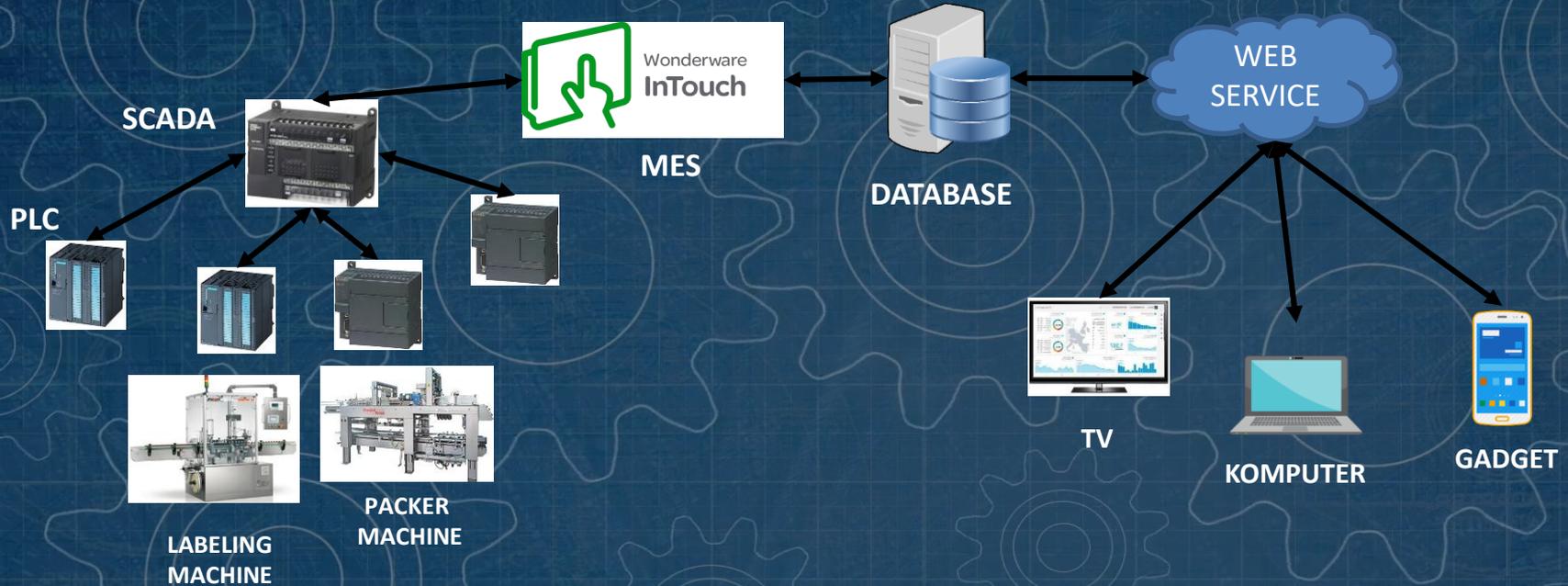


Program Created by Mr. Tegar

- ✓ Program Android
 - Supervisor checklist
- ✓ Program SCADA
 - Boiler Alarm system
 - Running Hours
 - Machine status
 - Display running text
- ✓ Program Website
 - Daily Processing Report
 - Breakdown Report for Technician
 - BBS
 - CIP Reminder



SCHEMATIC DIAGRAM MES PANDAAAN

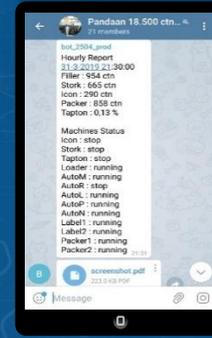
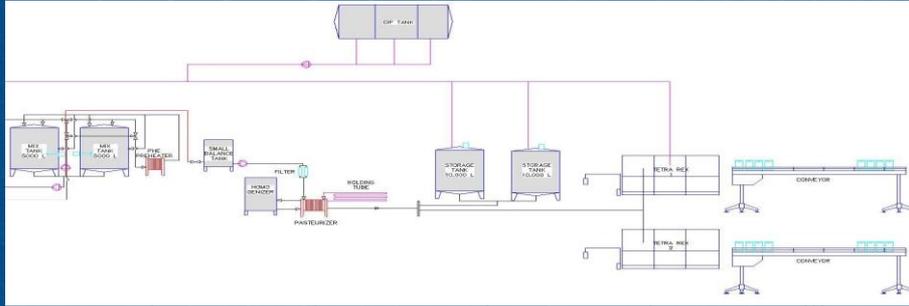


Machine -> MES PLC -> SCADA -> Database -> Web Service -> Desktop/Laptop/Gadget

MES PANDAAN



Milk Process Flow Overview



MIXING	PASTO	SV	FILLER	STERIL	PACKING
Control: •Composition •Temperature •Time Output: •Volume •Composition •Batch no	Control: •Temperature •Pressure •Time Output: •Volume •Temperature •Time (Aging) •Batch no	Control: •Volume •Temperature •Time Output: •Temperature •Batch no	Control: •Volume •Temperature •Pressure •Time •Contact time Output: •Speed •Output (pc) •Volume •Batch no	Control: •Temperature •Pressure •Time Output: •F0 value •End Temp •Time •Batch code	Control: - Output: •Output (pc) •Batch code • Machine Status

Dashboard Production Report



Manufacturing information system support manufacturing operations by providing relevant and timely **information** for decision making at factory levels.

- **Feature** : Hourly & shift output & machine status
- **Media** : Mobile phone
- **Authorized** : HOD, supervisor and key operator

BENEFIT :

Increases responsiveness to production conditions (downtime or breakdown time) so that production output is more reliable



Online Supporting Function PANDAAN

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Online Fresh Milk Analyze

The screenshot shows the 'Online Material Weighing' interface. It contains a large table with columns for material details, weighing status, and dates. The table is organized into sections for different materials.

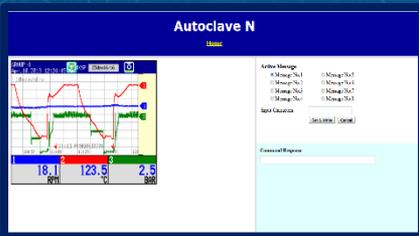
Online Material Weighing

The screenshot displays the 'Material Usage Variance' dashboard. It features a table with columns for material ID, name, unit, target, actual usage, and variance. The table is color-coded to highlight areas of concern.

Material Usage Variance

The screenshot shows the 'Online CIP Management' dashboard. It includes a table for 'CIP SCHEDULE' with columns for No., Shift, Start Date, End Date, and Status. The table lists various CIP activities and their completion status.

Online CIP Management



Sterilizations Analytic



Online SPV Checklist

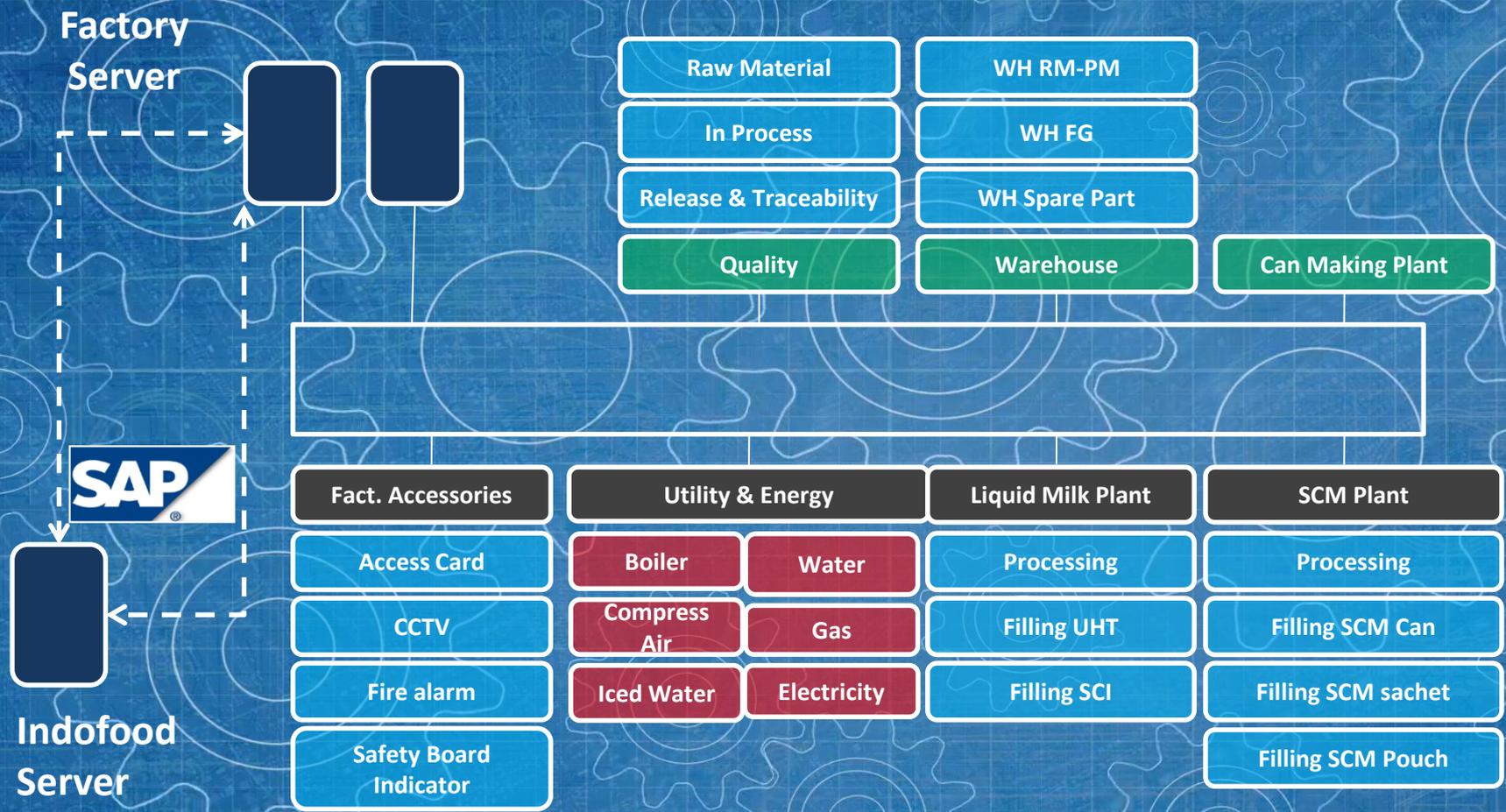
The screenshot displays the 'Online Utility Checklist' dashboard. It features a table with columns for utility ID, name, status, and dates. The table is organized into sections for different utility checklist items.

Online Utility Checklist

The screenshot shows the 'Online Working Instruction' dashboard. It features a table with columns for instruction ID, name, status, and dates. The table is organized into sections for different working instruction items.

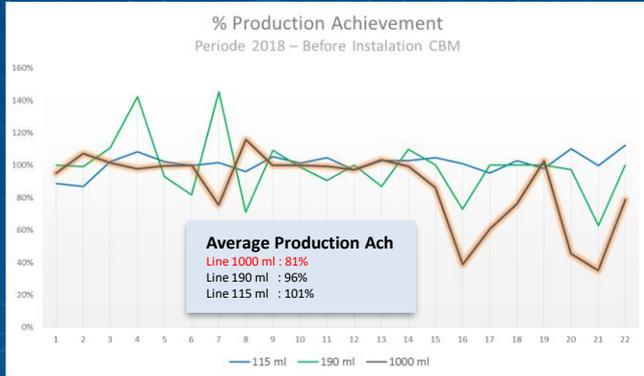
Online Working Instruction

PURWOSARI SMART FACTORY (Case Study)



CONDITION BASED MONITORING UHT LINE 1 LTR (CASE STUDY)

Pain Point



- Production Achievement bellow target (81% vs Target 95%)
- Filling machines is the major contributor (55%) from total breakdown
- Major breakdown is peroxide pump to times breakdown

Solution



- Implementation Predictive maintenance with vibration sensor
- Vibration analysis (RMS, Kurtosis) with augmented reality (long distance expert)

Impact / Benefit



- Benefit Result
- Avoid breakdown time 32 hours.
- Increase LE from 65% to 80%
- Increase Production Achievement from 81% to 95%
- Saving Cost 1.1 Bio IDR

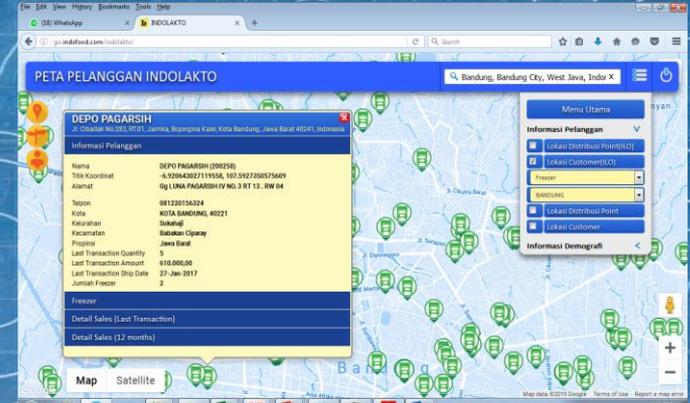
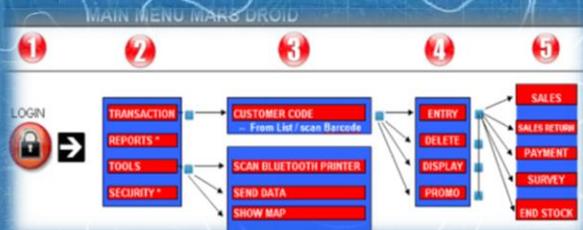
ONLINE SALES TOOLS FOR STOCK & TRANSACTION

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MARS DROID

Android Application for salesman to support transaction which provided with real time facility:

- Stock
- Payment
- Promo
- Market Return
- Customer Map



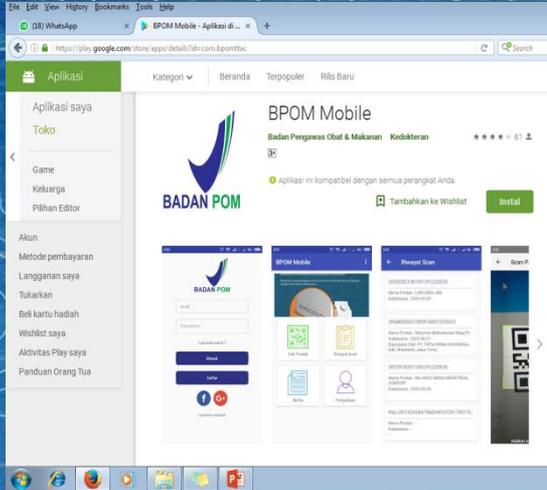
Freezer Position for Ice Cream

MARS GEOGRAPHIC

SMART PRODUCT – PRODUCT INFORMATION

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BPOM Mobile Android

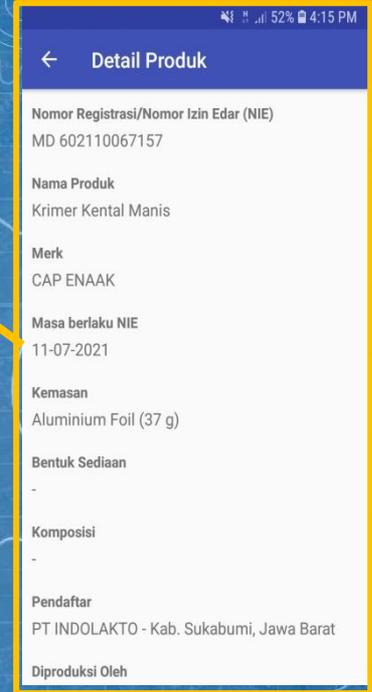


How to use

- Download BPOM Mobile Play Store
- Scan QR Code on product label
- After Scan, product specifications will appear



QR
CODE



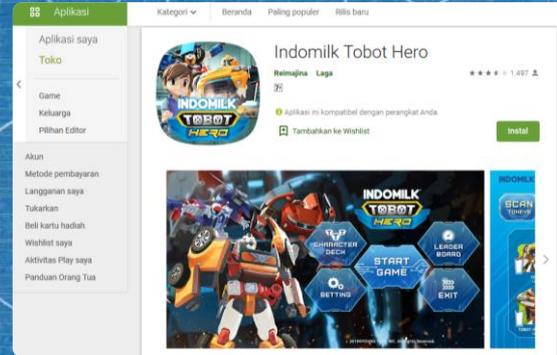
AUGMENTED REALITY FOR PROMOTION

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4.0

ON APP STORE



ON PLAY STORE



FUN AR INDOMILK GAME FITUR

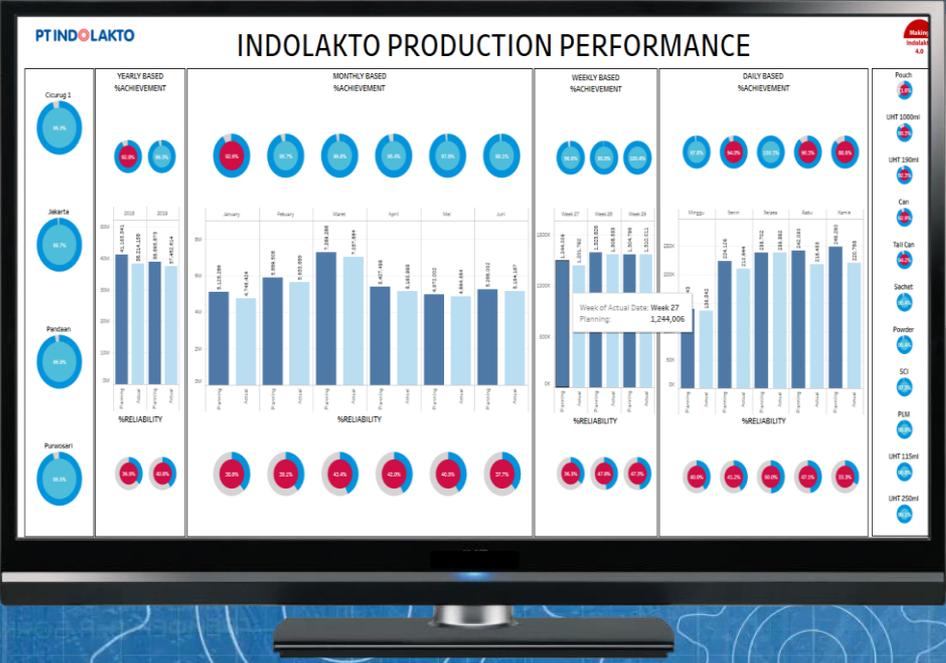
Buy an INDOMILK UHT Product

Install "Indomilk Fun AR" Application through App Store Android

Scan the Mascot Image on Product and Play the games according to the instruction in the games.



ONLINE DASHBOARD – HEAD OFFICE



Feature

- Online Report Actual Output versus Planning and Reliability Performance.



Let's Make



COME TRUE