

ADVANCING MANUFACTURING OPERATIONS

***How manufacturers are
adopting a customer-centric
mindset while seizing the
potential of digital tools and
reinventing their supply chains***

The future of manufacturing

Inserted in a **competitive environment**, producers will be pressured by changes in consumer habits that are demanding more **transparency** in production and supply chains and **decreasing profit margins**.

The effects of **inflation** will be felt in a general price increase that will affect both customers and companies. Energy and raw material/component price increases will require organizations to operate with **vision, discipline, and adaptability**.

Decarbonization, digitalization, cost pressures, **geopolitical** uncertainty, and safeguarding the **planet's resources** will shape the future of manufacturing operations.

HOW TO MATCH **SHORT-TERM COST PRESSURES** WITH
THE NEED TO **RESHAPE THE BUSINESS** FOR THE FUTURE.



These are the **top 7**
initiatives to **boost**
Manufacturing
Operations



CHALLENGES

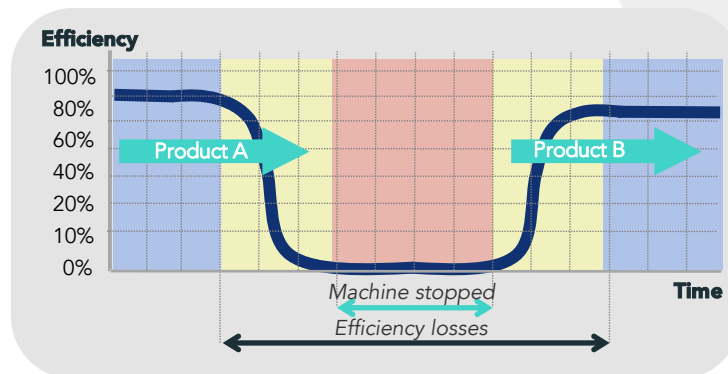
- Equipment availability issues related to breakdowns, micro-stoppages, cleaning, or changeovers.
- Recurring quality issues in labelling, packaging, or product specifications compliance.
- Lack of complete optimization of production parameters to reduce human intervention.
- All everyday Maintenance tasks only concentrated in specialized Maintenance teams.

IMPACT

- ⬆ **20%**
Overall Equipment Efficiency (OEE)
- ⬇ **40%**
Setup time

KAIZEN™ SOLUTIONS

- Implement **Kobetsu KAIZEN™** to solve basic, frequent, and sporadic equipment failures.
- Improve **Planned Maintenance** activities by understanding the shutdown critical path, managing spare parts in real time, implementing predictive maintenance, and standardizing maintenance tasks.
- Implement **Autonomous Maintenance** by operators focused on standards for cleaning, basic maintenance and detection of operating deviations.
- Use **SMED** to reduce total loss time due to changeovers and optimize setups sequencing.



Create **top-performing operations** by **boosting efficiency**

Efficiency is at the heart of most capital-intensive manufacturers, besides contributing to create flow in production and boosting productivity

CHALLENGES

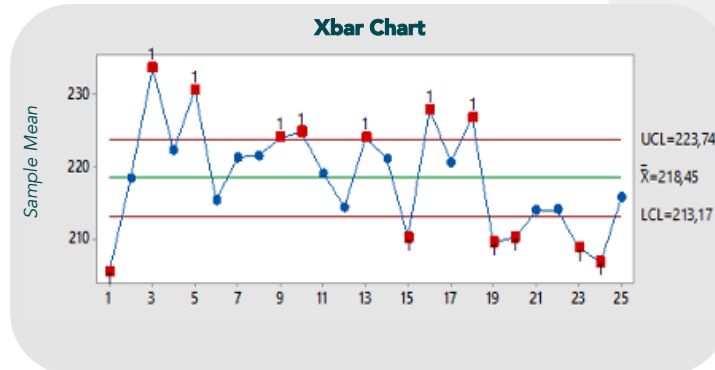
- Most of the material yield losses are hidden in the process.
- High variability in material or component consumption.
- Product development is not optimized to increase material yield.
- Lack of materials reuse in the process.

IMPACT

✓ **11%**
Materials and raw materials costs

KAIZEN™ SOLUTIONS

- Improve process control by using **Lean Six Sigma** to reduce consumption variability and standardize manufacturing tasks (adjust and fine-tuning of equipment).
- Eliminate **machine inefficiency** and/or replace outdated machinery.
- Implement **product reengineering** to remove non-value-added materials or technically improve the process to reduce the consumption of certain materials.
- **Reintroduce by-products** in the manufacturing process or use them to generate electricity (if possible).



Implement
a **material yield improvement plan**

Manufacturers have been facing increasing input costs - especially related to raw materials. Small improvements in material yield can have a significant impact on margins

CHALLENGES

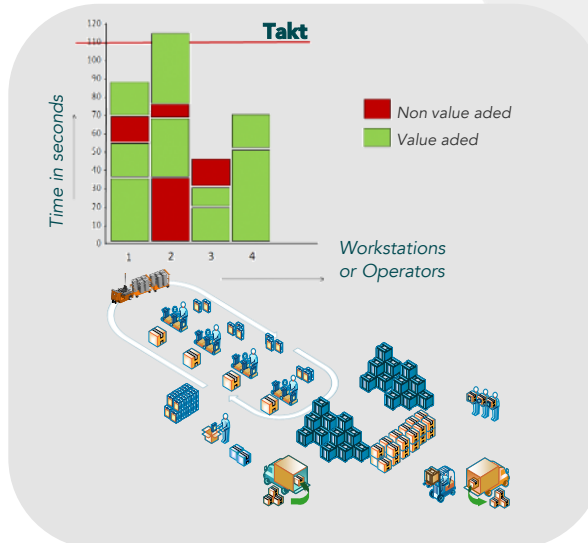
- Batch production with long production lead times.
- Production lines with unbalanced operations.
- Dysfunctional and non-ergonomic warehouse and production layouts.
- Team leaders are firefighting and focused on operational tasks.

KAIZEN™ SOLUTIONS

- Implement a one-piece flow from raw materials to finished products by implementing **Line Design and Standard Work**.
- Achieve **scale customization** through the flexibility required for the production of **small batches**.
- Implement an **information flow** that follows the material at all its stages.
- **Synchronise logistics loops** between Production and Logistics.
- Improve **warehouse design** to increase picking productivity.
- Develop a **training plan** to ensure standard compliance and the transmission of best practices.

IMPACT

- ⬆ **30%**
Productivity
- ⬆ **20%**
Service level



Adopt a **flow improvement** model

Around 70% of production time is non-added value. 20% of productivity loss is due to functional layouts and inadequate logistics

CHALLENGES

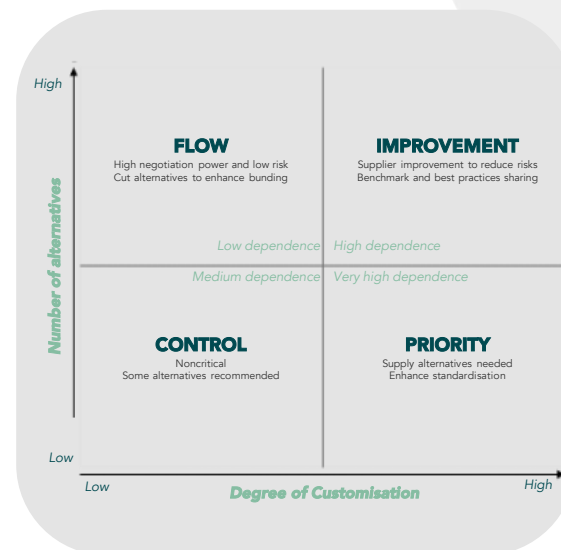
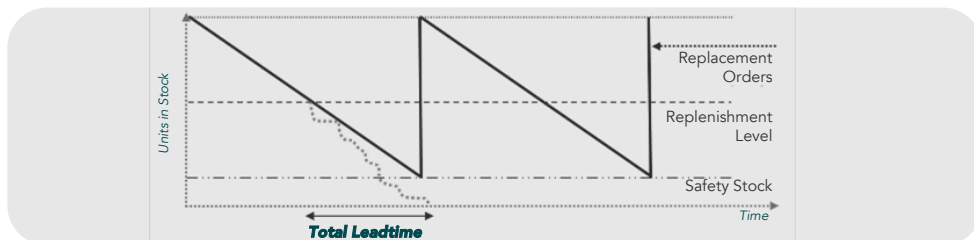
- High stocks of slow movers.
- Reduced warehouse occupancy.
- Purchase orders based on non-accurate sales forecast.
- High number of finished product SKUs (many variations on packaging and labelling for different markets).
- Production Planning execution focused on maximizing equipment occupancy and efficiency instead of customer service level.

IMPACT

- ✓ **20%**
Stock levels
- ^ **38%**
Service level agreement compliance

KAIZEN™ SOLUTIONS

- Refine the **stock management policy** to achieve the right balance between coverage levels and stockouts.
- Link production to logistics by implementing a **planning algorithm** based on historical data, replenishment lead times, stock strategy for each reference, and consumption data.
- Reduce supplier dependence to decrease sourcing variability.



Shift from
push to **pull**
production

High seasonality in raw materials availability and the increasing number of finished product references create complex challenges for F&B Supply Chain planning

CHALLENGES

- High consumption of energy and water.
- Evolving consumer expectations dictate that clients value convenience, sustainability, transparency, and ethical sourcing.
- Lack of measurement of energy and water consumption throughout all stages of the production process.

KAIZEN™ SOLUTIONS

- Leverage **data analytics** and expert insights to develop an actionable zero carbon roadmap.
- Focus on **real-time measurement** of energy consumption hotspots and execute a **cost/benefit analysis** to identify critical equipment whose energy performance should be primarily improved.
- Reduce resource consumption and strive for circularity in energy and water consumption.

Power factor correction

Intelligent technology

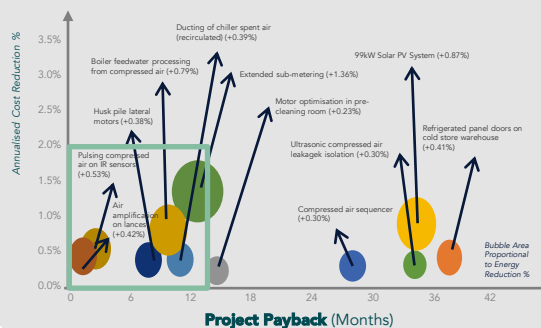
Equipment maintenance plan

Resources reutilisation

IMPACT

- ✓ **15%**
Energy and water consumption
- ✓ **13%**
Energy cost

The impact of sustainable operations in project playback



Develop
**sustainable
operations**

Only 20% of manufacturing companies are on-track to meet their sustainability goals

CHALLENGES

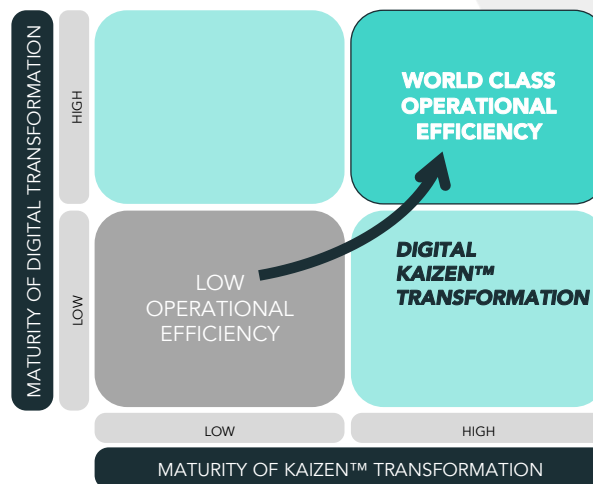
- Difficult access to information.
- Reduced return on digital operations.
- Digital efforts are not tied to a broader operations strategy.
- Underskilled workforce.

IMPACT

^ **20%**
Efficiency

KAIZEN™ SOLUTIONS

- Effective and flexible **automation**.
- More **accessible information** allows effective use of real-time data and data analytics for decision-making and process improvement.
- **Advanced analytics** to improve planning and forecasting.
- Embed **new technologies** as artificial intelligence or machine learning in every stage of manufacturing operations.
- Develop **digital competencies** by implementing a program of workforce training.



Harness
the **power**
of **data**

57% of companies do not make use of data in a meaningful way to facilitate process improvement

CHALLENGES

- Production teams are organized in silos leading to low flexibility.
- High span of control.
- Low polyvalence of teams.
- Lack of managers' ownership in the training and support of teams.
- Unstructured methods to deploy new processes.

IMPACT

- ▲ Teams' flexibility and polyvalence
- ▲ Improvements sustained over time

KAIZEN™ SOLUTIONS

- Organize production lines in value streams to **improve flexibility** and increase resource productivity.
- Deploy **new standards** or processes using a structured **Training plan** to develop team members. Implement a **Team Development Programme** by first training the team leaders and then assign them the responsibility of training the team members.



Reorganise teams to reinforce the KAIZEN™ culture

To support a deep operational transformation, a strong improvement culture needs to be established within the organization

Ready to **BOOST** manufacturing operations?



CREATE **TOP-
PERFORMING**
OPERATIONS BY
BOOSTING **EFFICIENCY**

IMPLEMENT A
**MATERIAL YIELD
IMPROVEMENT** PLAN

ADOPT A **FLOW
IMPROVEMENT** MODEL

SHIFT FROM PUSH TO
PULL PRODUCTION

DEVELOP **SUSTAINABLE**
OPERATIONS

REORGANISE TEAMS
TO IMPROVE THE
KAIZEN™ CULTURE



HARNESS THE **POWER OF DATA**

How to START?

The KAIZEN approach starts with an end-to-end analysis of the **MANUFACTURING PROCESSES.** This analysis culminates in a customized Solution Design and Implementation Plan.

The solutions implementation is carried out side-by-side with the teams and the KAIZEN™ experts. This will **enhance the internal knowledge and experience of the teams** and develop their improvement skills. Agility is ensured through **intensive working sessions involving all the stakeholders.**

By working closely with your Management Team, we will understand the current situation of your business areas, identify the main gaps and opportunities, design the vision, and define an implementation plan with KAIZEN™ events.



1

PREPARATION

Observe, define, and measure



2

CURRENT STATE ANALYSIS

Identify the starting point and opportunities



3

ON-THE-JOB TRAINING

Understand the sector's best practices



4

VISION DESIGN

Design and test



5

RETURN CALCULATION AND TIMELINE

*Quantify and plan!
From vision to action*

kaizen.com



THANK YOU

Kaizen Institute Consulting Group, Ltd.
kaizen.com