

Working Group 1&3

Interim Report for AKAC 2021.

2021.08.26

Chair of WG 1&3

Mr. Hosni Belhadj, CETIME, Tunisia

Schedule of WG 1&3 in the half of the year 2021

| Date | Ageda | Outcome |
|---------------------------------|---|---|
| 19/01/21 | 2 nd Meeting to share the current situations <u>focusing on the certification system</u> | Shared data and information |
| 16/02/21 | 3 rd Meeting to share the current situations <u>focusing on KPIs</u> | Shared data and information |
| 17/02/21- 16/03/21 | Implementing 3 rd assignment <ul style="list-style-type: none"> ➤ Reviewing the findings reported in the previous 2 meetings (2nd and 3rd) ➤ Identifying the difficulties/existing problem to set up the certification system and to apply common KPIs in each country ➤ Brainstorm the way forward | |
| 17/03/21 | 4 th Meeting to discuss findings and challenges specified in the previous 2 meeting and discuss the | Consensus |
| 20/04/2021 | 5 th Meeting to deepen the discussion of common KPIs, focusing on the current situation about KPI in each country | Idea to move forward was shared and agreed, while the current status of KPIs in each country is shared. |
| 25/05/2021 | 6 th Meeting to discuss the methodology to express the Kaizen effect by financial figures | 4 methodology was suggested and 2 among the four was selected. |
| 17/06/2021 And 03/08/2021 | 7 th and 8 th Meeting to discuss the format to express Kaizen effect by financial figures | The formats to express Kaizen effect by financial figures was explained and agreed. |

Theme (WG) 1: Certification System

1. We have summarized the current status of Certification system in each country by making the chart and waiting for the several rest countries will reply.
2. Regarding the certification system, after the summarization, we need to decide the pilot country to be assisted for setting up the certification system by the scheme of JICA survey.
3. Based on the pilot activities in the selected pilot country, we will decide the contents of the “guideline” for AUDA-NEPAD.
4. However, it might be still difficult to start the pilot activities soon because of COVID-19. Maybe from autumn?
Therefore, we agreed that we will concentrate more on the discussion about KPI for the time being.

Expected Monitoring system of Common KPIs by JICA survey team

| | In Companies | In Countries | Transcontinental |
|----------------------------|--|---|--|
| Actor | Kaizen consultants of each country | Kaizen promotion organization officers of each country | AUDA-NEPAD officers |
| Content of collected data | <ul style="list-style-type: none"> Labor productivity (person-hours) in model area Defective rate Yield rate On-time delivery rate Waste reduction volume | Aggregates the raw data for the five indicators at left and Kaizen rates for each by sector | Aggregates the data in a format that is easy to use for AUDA-NEPAD advocacy such as by sector, by regional economic communities (RECS), by SDG theme, etc. |
| | <ul style="list-style-type: none"> Monetary amounts directly linked to enhancing added value that can be converted into monetary value | Aggregates the data at left by sector | |
| Frequency | Sequentially after completion of each company's Kaizen implementation | Once every six months (discussions necessary in the same span) | Once every year (discussions necessary in the same span) |
| Method | Transition from submission of Excel files through individual emails to submission via a simple data base using G-Suite | | |
| Recording/reporting format | After compiling the Kaizen results sheets, enters data into Excel files for reporting (or into the database after its creation). | Aggregates and edits the Excel forms used for the reporting at left ⇒ Aggregates and edits through the database after its creation | Aggregates and edits the Excel forms used for each country's reporting ⇒ Aggregates and edits through the database after its creation |
| Feedback method | <u>Includes Kaizen results sheet in company reports</u> | <u>Creates annual Kaizen reports</u> | <u>Creates the African Kaizen White Paper</u> |

Theme (WG) 3: Common KPIs

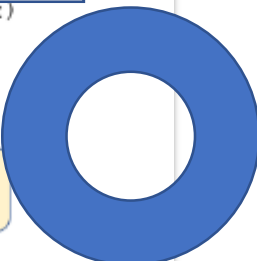
-How to express the Kaizen effect by financial figure-

1st approach to see the Kaizen effect for the profit.
- If we can know the Gross Profit, we can calculate the profit improvement -

Approach 1
Productivity Improved ratio
x Cover Ratio x GP

(Total impact to entire company) X (Total GP) = (Total Improved Profit)

Point 3
Can we get Gross Profit of the company?
Pouvons-nous obtenir le bénéfice brut de l'entreprise?




2nd approach to see the Kaizen effect for the profit.
- If we can know the Wage Rate, we can simply calculate the profit improvement!

Approach 2
WAGE Rate

Point 4
It's difficult to get Wage Rate. (Usually, small company does not have...)
Il est difficile d'obtenir le taux de salaire. (Habituellement, une petite entreprise n'a pas...)


Wage Rate: Added value amount that direct workers should create per...
Wage Rate = (Yearly Marginal Profit) / (Yearly total direct worker's M...)
(Marginal Profit : Net sales - variable cost)



Approach 3
Productivity Improved ratio x
Unit Price

Increased productivity...
Unit price...
\$10.0 x 1,200 x 0.25 = \$3,000
\$4.0 x 24,000 = \$96,000

Point 5
1. Actually, there is a limit to demand, so productivity improvement does not...
2. Even if it contributes to sales improvement, it is far from the increase in profit...
3. Knowing the unit price is difficult.



Approach 4
GP/M-H


4th approach to see the Kaizen effect for the profit.
- If we can get the GP improvement ratio, we can see the Kaizen contribution for entire company -

GP/M-H

0.74 - 1.3
1.2 = 20%

0.76 - 0.23
1.23 = 21.7%

0.22 - 0.25
0.22 = -11.1%



It's difficult to obtain required unit price

There are factors other than Kaizen effect

Format to calculate automatically into the Kaizen effect by financial figure

| Company Information | | | | | | |
|------------------------------|--------------------------------------|---|---|------------------------|-------------------|--------------------|
| | Name | CODE | | | | |
| Country | Republic of Tunisia | 33 | | | | |
| Company | AAA company | 33-00001 | | | | |
| Sector code | Manufacturing | 1 | | | | |
| Manufacturing Subsector Code | Electronics | 16 | | | | |
| Service Subsector Code | Service Subsector Code | Code | | | | |
| | | | | | | |
| | Item | Difinition | | | | |
| Basic Condition | Minumum Wage/Hour | legal minimum wage | 100 | TND | | |
| | | | 3,934.00 | JPY | | |
| | Pilot Line coverage ratio | Gross profit base or Sales base | 30% | | | |
| | Yearly Gross Profit | last year actual | 1,000,000 | TND | | |
| | | | | | | |
| Field | Item | Difinition | Condition Before Kaizen | Condition After Kaizen | Improvement ratio | Output/Input Units |
| Key Indicators of Pilot Line | Output | Qty',Number of Customer,CS,Sales etc. | 800 | 1,200 | | Daily |
| | Input (M-H) | Man-Hour(M-H) | 200 | 180 | | Daily |
| | Productivity(Output/M-H) | | 4.000 | 6.667 | 66.7% | |
| | Defect(%) | (Number of defect product/ Products Quantity) | 5.50% | 1.40% | -74.55% | |
| | | | | | | |
| Sub indicaor of Pilot Line | Used Space | M ² | 300 | 250 | -50 | |
| | Space-Productivity | | 2.67 | 4.00 | 133.3% | |
| | | | | | | Time unit |
| | Lead Time(Factory-in to Factory-out) | Second,Minute,Hour,Day | 7,200 | 2,880 | 60% | PLS INPUT |
| | Lead Time(Line-in to Line-out) | Second,Minute,Hour,Day | 80 | 35 | 56% | PLS INPUT |
| | | | | | | |
| | WIP(Qty') | The average number in the line | 100 | 50 | 50% | |
| | | | | | | |
| | 7200 | OEE | AvilabilityxPerformance xQuality | 68.00% | 83.00% | 22.06% |
| Company -wise Sub indicators | | Inventory (from B/S) | Inventory Amount in B/S | 500,000 | 230,000 | |
| | | Yearly Net Sales | Net sales | 2,000,000 | 2,000,000 | |
| | | Inventory Turnover(D/S) | | 91.3 | 42.0 | 54.0% |
| | | | | | | |
| | | Return ratio(%) | The number of return product/shipped Qty' | 8.50% | 2.30% | 72.94% |
| | | ES score(point) | | 45 | 65 | 44.4% |
| | Yearly Incident | The number of insident in work site | 10 | 2 | 80% | |

GEMBA KPI

Pilot implementation of the format in the 3rd quarter

| KPI & Sub Indicator list | | | | |
|------------------------------|--------------------------------------|---------------|-------------------|----------------|
| | name | Code | Sector Code | Subsector Code |
| Country | Republic of Tunisia | | 33 | |
| Company | AAA company | 33-00001 | | 1 16 |
| | | | | |
| Category | Item | Figure | | |
| KPI A-1 | Financial Improvement by Kaizen | 472,080 JPY | | |
| KPI A-2 | Financial Improvement by Kaizen | 7,868,000 JPY | | |
| | | | Improvement ratio | |
| Key Indicator of Pilot Line | Productivity Improvemen(per M-H) | 66.7% | | |
| | Defect ratio improvement | 74.5% | | |
| Sub indicaor of Pilot Line | Productivity improvement(per Sapce) | 60.0% | | |
| | Lead time Reduction-1(F-in to F-out) | 56.3% | | |
| | Lead time Reduction-2(L-in to L-out) | 50.0% | | |
| | WIP Reduction | | | |
| | OEE improvement | 22.1% | | |
| Company -wise Sub indicators | Inventry Reduction | 54.0% | | |
| | Return Ratio | 72.9% | | |
| | Employee Satisfaction | 44.4% | | |
| | Incident(safety) | 80.0% | | |

Financial effect of Kaizen