GEMBA KAIZEN DISCUSSION

THE 29TH ICPAK ANNUAL SEMINAR
Investment Realities, Opportunities and Challenges
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Sai Rock Hotel, Mombasa

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Manager Sales & Production Planning

&
John Wachira – Manager ICT
• What is Gemba Kaizen
• Why Gemba Kaizen
• The Gemba Kaizen Principles
• Application of Gemba Kaizen
• Gemba Kaizen Implementation Challenges
• Success stories
THE PAN-AFRICAN GROUP – SAFAL HAS A PRESENCE ACROSS AFRICA

Safintra Lubumbashi 2008
Safintra Rwanda 2007
Safintra Angola 2005
Safintra Zambia 2005

Safintra Djibouti 2009
Eth. Steel 1996
Uganda Baati 1962
Insteel 1978 Kenya
MRM 1961 Kenya
ALAF 1960 Tanzania
Safintra Malawi 2005
Safint. Mozam. 2007
Safintra Steel 2005
Kifaru Trading 1996
Safintra Investments 1995
Safal Steel 2007
Company Vision & Mission

• **Vision**
  To be the Toyota in “Metal Roofing Solutions”.

• **Mission**
  Deliver Value for money in Metal Roofing Solutions.
Core Values

• MRM shall and will take no shortcuts to Ethics, Compliance and Quality.

• MRM shall be fair and caring towards Employees, Customers, Community, Environment and other Stakeholders.
Our contribution to roofing solutions
Brands

More Mabati Than Mabati
KEY PROCESSES

Integrated with ERP-SAP
THE 4 Ps OF TOYOTA

Figure 1-1. A “4 P” model of the Toyota Way

- Continual organizational learning through Kaizen
- Go see for yourself to thoroughly understand the situation (Genchi Genbutsu)
- Make decisions slowly by consensus, thoroughly considering all options; implement rapidly

- Grow leaders who live the philosophy
- Respect, develop, and challenge your people and teams
- Respect, challenge, and help your suppliers

- Create process “flow” to surface problems
- Use pull systems to avoid overproduction
- Level out the workload (Heijunka)
- Stop when there is a quality problem (Jidoka)
- Standardize tasks for continuous improvement
- Use visual control so no problems are hidden
- Use only reliable, thoroughly tested technology

- Base management decisions on a long-term philosophy, even at the expense of short-term financial goals
That people are the drivers of success, technology is only an enabler.
• NEED FOR CHANGE : Why GK
Business Challenges

- Precarious Environment
- Self-Learning Work Cultures
- Globalization & Anti-Globalization
- Energy & Material Shortages
- Consumer demand
- Globalization & Anti-Globalization
Strive for Excellence

• An unattainable goal; an ever-receding horizon on our “journey.”
  (If we can only go half-way to a goal at one move, an infinite number of moves is required to reach it.)
• An evolutionary goal. A standard of process perfection that must evolve with changing conditions.
  (Nature does not have fixed, linear goals; all goals are temporary)- same applies to business environment
The need for CHANGE

It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change.

Charles Darwin

You can’t solve today’s problems at the same level of thinking you were at when you created them.”

Albert Einstein

SUCCESSFUL CHANGE Involvement leads to Ownership which leads to Commitment which leads to Success.

An organization, once it has built its edifice, begins its decline. I.e., there must be a continuing effort for improvement to even maintain the status quo.

Parkinson's law
• What is GK
KAIZEN = Continual Improvement of all aspects of an organization at all levels all the time, forever.
KAIZEN HISTORY

e) Key tool in Lean Production today

d) Popular in American Auto and Aerospace industries in the 1990s ("Kaizen Blitz")

c) It spread overseas as Japanese business activities expanded abroad - 1980s

b) Japan assimilated and developed it as its own management practice method (TPS- 1970s)

a) Quality control method imported from the United States in the post WW2 (1945) period by Drs. W. E. Deming and J. M. Juran,
It assumes that our way of life—be it our working life, our social life, or our home life—should focus on constant-improvement efforts.....

“Kaizen contributed greatly to Japan’s competitive success.” (Imai, 1997, p.1)

The mantra is “best we’ve ever been is the worst we’ll ever be.”
Process Kaizen
Multi-Dimensional Improvement

- Defect Reduction
- Process duration time
- Space consumed
- Human labor time; mental and physical.
- Change times or set up times. (Lower gives more flexibility.)
- Material used
- Equipment time (and fuel energy)

Note that no measurement uses a monetary value.
• GK PRINCIPLES & APPLICATION
THE 3 GEMs & 6Ms CONCEPTS.

• **The 3 –GEMs.**
  1. **GEMBA** -
     Actual work place
  2. **GEMBUTSU** –
     Things at work place.
  3. **GEMJITSU** –
     Actual facts
     (Abnormalities at the work place)

• **The 6Ms.**
  1. **MAN.**
  2. **MACHINE.**
  3. **MATERIAL.**
  4. **METHOD.**
  5. **MEASUREMENT**
  6. **MONEY**
KAIZEN
(Focused Improvement)

Focused Process Improvement:
• in Strategically Important Areas
• Significant (Large) Improvements (and small ones that go with it)
• Sustainable Improvements
• Speedily Executed Improvements
Focused Improvement.
Improvement is different from Focused Improvement

**Improvement**

- Paper does not burn in sunlight

**Focused Improvement**

- Paper burns

Improvement is like sunlight:
- Lot of energy, but dispersed (wasted)
- Small improvements
- Slow progress.

Focusing the lens concentrates the energy form the sun:
- Little energy, but concentrated and aligned
- Enables significant (large) improvements
- Small time required
- Rapid progress
Isn’t KAIZEN supposed to be *small improvements*?

Kaizen is successive *small changes* that leads to Large Improvement

Succession of small changes (steps) that result in large improvement
KAIZEN Comes in Three Types

Known Waste

Hidden Waste

Attack
Hidden Waste

SGA Kaizen

Kaikaku (Large Kaizen)

Suggestion Kaizen + QCC

done by Small Group Activity (SGA)
done by Management thru CFTs
done through Individual Suggestions

Known Waste

Work teams
Known Waste

Hidden Waste

Suggestion Kaizen + QCC

SGA Kaizen

Kaikaku (Large Kaizen)

Biggest Savings

done by Management

Moderate Savings

done by Small Group Activity

Coins

done through Individual Suggestions
GEMBA (workplace)

GEM + BA
means means
Real + Place

GEMBA is where:

• WORK IS DONE
• VALUE IS CREATED
• PROBLEM – SOLVING HAPPENS
Essence of KAIZEN® Philosophy

Activity = Useful Work + Wasteful Work

Expenditure = Cost + Waste
Techies keep attacking this Essence of KAIZEN® Philosophy

Activity = Useful Work + Wasteful Work
Expenditure = Cost + Waste

Don’t attack; it is useful

Attack first

Techies keep attacking this

Muda
The Market determines the Price

Previously price-cost equalled profit:

before:  

Manufacturing costs  Profit

Cost savings

Manufacturing costs  Profit

today:  

Manufacturing costs  Profit

Market price  The market determines the price!

Sale price

Sale price

Profits can be maintained only through the reduction of cost!
Basic Questions

• What Adds Value (VA)?
  – customer will pay for?
  – customers need, even if they do not realize that they need it?
  – socially, morally, ethically, is the right thing to do?
• what is NVA (Non-Value Adding)?

Gemba Kaizen®?
A process of Continuously
  – Identifying
  – Reducing
  – Eliminating
  – Non value adding activities from the workplace
# Examples of Value and Non-Value Added Activities

## Real Value Adding:
- Acknowledging a Customer Order
- Delivering a product
- Processing a Customer Order
- Providing after sales service

## Business Value Adding:
- Updating financial accounts
- Updating training records
- Issuing Purchase Orders
- Negotiating price

## Non-Value adding
- Rework
- Authorisations and Approvals
- Checking and Inspection

## Reviews and Audits
- Complaint Handling
- Processing Customer claims/credits
# The 3 MUs

<table>
<thead>
<tr>
<th>S/#</th>
<th>The 3 MUs</th>
<th>SYMPTOMS</th>
<th>Cure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>MUda Wastes (NVAs)</td>
<td>Activity that costs money; but adds no value to the customer (internal or external.) The 7 +1 deadly wastes</td>
<td>Suggested for respective waste elimination</td>
</tr>
<tr>
<td>2.</td>
<td>MUra Variations / inconsistencies</td>
<td>Deviation from a set standard or expected outcome (in Quality &amp; Quantity of output or delays.)</td>
<td>Build Robust process; go upstream &amp; fix causes of variations (5 Why &amp; 2H Analysis, 7QC tools &amp; DOE)</td>
</tr>
<tr>
<td>3.</td>
<td>MUri Strain/Burden on Man &amp; M/C</td>
<td>Avoidable physical strain/burden on Man and Machines/Equipments at work.</td>
<td>Ergonomic design of work stations, good work environment and design of standardized work.</td>
</tr>
</tbody>
</table>
### 7 (+1) Types of Muda In Business

<table>
<thead>
<tr>
<th>TYPES</th>
<th>EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Defects</td>
<td>Scrap, Rework, Replacement, Inspection.</td>
</tr>
<tr>
<td>2) Waiting</td>
<td>Stock-outs, Lot Processing Delays, Equipment Downtime, Capacity Bottlenecks.</td>
</tr>
<tr>
<td>3) Processing</td>
<td>Unnecessary or Incorrect Processing.</td>
</tr>
<tr>
<td>4) Overproduction</td>
<td>Manufacturing the Items in anticipation, for which there are no orders, no requirement from internal customers.</td>
</tr>
<tr>
<td>5) Movement</td>
<td>Human Movements that are Unnecessary or Straining.</td>
</tr>
<tr>
<td>6) Inventory</td>
<td>Excess - Raw Material or WIP or Finished Goods.</td>
</tr>
<tr>
<td>7) Transport</td>
<td>Carrying WIP to Long Distances, Inefficient Transport</td>
</tr>
<tr>
<td>7 (+1)</td>
<td>Un-utilised Human creativity</td>
</tr>
</tbody>
</table>
Mura - Inconsistencies

- Happens only sometimes? Mura!
- Happens to only some people? Mura!
- Happens only some places? Mura!

- Ask “Why” five times
- Use diagnostic method like Kepner-Tregoe
Muri - Physical Strain

- Bend to work?
- Noisy?
- Polluted air?
- Vibrating machine?
- Push hard?
- Lift weight?
- Repeat tiring action?
- Wasteful walk?
Kaizen Sequence

ALWAYS ATTACK:
MUDA FIRST

MURA NEXT

MURI LAST
Gemba kaizen®, now redefined .....  

• A process of Continuously  
• Identifying  
• Reducing  
• Eliminating  

Waste (muda), inconsistencies & variations (Mura) and physical strain (Muri) (3 Mu) from the workplace (Gemba)
# The Gemba Kaizen Principles

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go to Gemba</td>
<td>- When an abnormality occurs</td>
</tr>
<tr>
<td>Check Gembutsu</td>
<td>- Machine, Material, Failures, Rejects etc.</td>
</tr>
<tr>
<td>Search for Muda and Mura</td>
<td>- Muda (waste), Mura (inconsistency), Muri (physical strain)</td>
</tr>
<tr>
<td>Speak with data</td>
<td>- Take temporary countermeasures on the spot</td>
</tr>
<tr>
<td>Make /Do KAIZEN</td>
<td>- Remove root causes</td>
</tr>
<tr>
<td>Standardize</td>
<td>- Standardize to prevent recurrence</td>
</tr>
</tbody>
</table>
PROBLEM SOLUTION STEPS

• **Problem identification**
  – Problem statement (5W2H.)
  – Problem grouping or categorization.

• **Problem investigation**
  – Relationship analysis
  – Problems’ quantification (7 TQM Tools.)
  – Priority analysis (priority quadrant.)

• **Root cause analysis**
  – Why – Why analysis

• **Generate countermeasures**
  – Idea bit/brainstorming

• **Action planning**
  – Create steps to implement countermeasures
  – Create schedule

• **Implement countermeasure.**

• **Check the Results**

• **Follow up / Standardize**
# Rigorous Version of 5 Whys: Deming Circle

| Act = Standardize in Practice | Plan: See problem in **context**:
|-------------------------------|-------------------------------------
| • Training (TWI)             | Go to the source and see for yourself. |
| • Practice                   | **Root Need**: Why is this problem important? |
| • Follow up                  | Outcropping or mother lode? |
| • Documentation              | **Write** a simple statement. |
| • How can we learn more?     | |

<table>
<thead>
<tr>
<th>Check = Try it out</th>
<th>Do = Analyze</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gather and examine the same kind of facts and data again.</td>
<td>Get facts and data.</td>
</tr>
<tr>
<td>Does evidence show that we fixed it?</td>
<td>Examine evidence for <strong>root cause</strong>. (Multiple “causes” are common)</td>
</tr>
<tr>
<td>Fixed now, or fixed forever?</td>
<td><strong>Write</strong> a countermeasure (a “fix”).</td>
</tr>
</tbody>
</table>
THE PDCA CYCLE

Act
- Reflection
- Policies and objectives
- Standardization
- Work plan

Plan
- Checkpoints
- Training
- Do
- Urgent Countermeasures
- Confirm the results

Check
- Prevention of recurrences
- Find the basic reasons

Kaizen Toolbox

- Flowcharts
- Cause and Effect Diagrams
- Pareto Charts
- Histograms
- Control charts
- Scatter Plots
- Check Sheets
- Statistical Methods
- TQM
- Kaizen Pledge
- Value Stream Mapping (VSM)
- 5S (K)
- Takt, Lead & Cycle times
- Spaghetti Diagram
- Poka Yoke
- Kanban
- Visual Controls
- TPM
- 5 Whys 2Hs
- TDP
KAIZEN Journey

Improve what you maintain, Maintain what you improve

SDCA - PDCA

P: Plan
D: Do
C: Check
A: Act

S: Standardize
D: Do
C: Check
A: Act

Time
Business Process

A process is...

- A series of related activities that “flow” through an organisation
- Not limited to a single function or department
- Something that can be viewed from end to end

$$Y = f(X)$$
The Focus

Manage the Inputs (X) and good outputs (Y) will follow

\[ Y = f(X) \]

- **Y**
  - Dependent
  - Output
  - Effect
  - Symptom
  - Monitor
  - Response

- **X1 \ldots XN**
  - Independent
  - Input-Process
  - Cause
  - Problem
  - Control

If we are so good at X why do we constantly test and inspect Y?
KAIZEN Concepts

Company / Business

Tools

Systems

SDCA – PDCA

Quality First

Market In

Upstream Management

Next Process is Customer

speak with Data

Variability Control

Process and Results

Total Systems

Non-blaming Non-judgmental

Muda

MURA

MURI

Muda

MURA

MURI

QCTD

Gemba
KAIZEN-MANAGEMENT-SYSTEM FOR SUSTAINABLE PROFIT AND GROWTH

Employee involvement

Zero Errors

Process Effectiveness

Lean Support Systems

TPM
Total Productive Maintenance

TQC
Total Quality Control

TSM
Total Service Management

Eliminate: MUDA-Waste

Built up with a solid base:
KAIZEN Foundations

Eliminate: MUDA-Losses
Typical Process Measurements

- **Time:**
  - Lead times; on times
  - Duration times
  - Changeover times
  - Learning times

- **Space**

- **Resources:**
  - People, machines, tools, energy, information

Factory Process Basics:
- Quality yield
- Resources used
- On-time results
- Lead times
• GK implementation challenges
Some typical misconceptions on Kaizen

• Kaizen is for workers; It is not for managers
• Kaizen is SMALL improvements only
• Kaizen is only a sort of implemented-suggestion scheme
• Any implemented improvement is Kaizen

When does it become KAIZEN?
• large improvements are made
• small time and small money is used
• bottleneck problem is attacked
• process observation is used
• KAIZEN paradigms are deployed
• management participation exists
Everybody begins by learning kaizen techniques, then using lean methods to make problems visible for more kaizen.

But the real challenge is maximum development of all the people.
Process of Personal Change

Paradigms, Perceptions

Way of Being

Thoughts, Understanding

Habits

Behavior
"Learning Organizations"

**Process learning continuum:**
From exceedingly-detailed incremental improvement to drastic, revolutionary innovation.

**Human learning continuum:**
From heroic, episodic learning by a few to collaborative learning by everyone in an “extended enterprise.”
Self-Learning Work Cultures

• A professional problem solving workforce
  – Professional attitude: service, not subservience
  – Every worker developed to see and solve problems; outside the company as well as in

• “Professionals” tend the needs of all stakeholders
  – A “company” is a service organization first; being a financial entity is a transactional necessity
  – Invest in developing people and serving a need
  – Leadership: Create a professional work culture
KAIZEN Paradigm: Process of Business Change

Paradigms, Perceptions
Thoughts, Understanding
Culture
Systems
Work
Changing an entire organization, in all areas, is a much bigger challenge than improving flow in operations areas.
Daily “Detailed” Improvement
(Iterative mini-kaizen by the entire workforce)

Most efficient work considering safety, quality, quantity, cost, and its development by all the people.

**Objective:** Always make the next “after” state better than the “before” state.

**How to:**
1. Observe the current state: Document (or re-document).
2. Get ideas; ask 5 whys; go through PDCA; etc.
3. Adopt the proposed method; document & check.

**When:** At a minimum, May be after every work cycle.
KAIZEN MANAGEMENT (ROLES.)

 Promotion: Advertising
 Key figures:
 Key boards
 Communication: Meetings
 organize
 Coordination: Actions plan and
 follow through

 Goals
 Checks: Diagnosis, Audit
 Strategy: KAIZEN® Journey,
 Road Map
 Systems: TPM, TFM, TQM,
 Support Systems
 Tools: 5S, PDCA, Visual
 Management, Standardizing

 Training
 Training: Requirements, needs
 Qualification matrix: Constructing
 and representing as required
 Train the Trainer: Training the
 Coaches
 Training: Documents,
 Practice, coach guide lines

 Workshops
 Workshops organization:
 Introductions, timing schedule
 Carrying out Workshops:
 Instruct teams, involvement
 Identifying measures:
 Plans and control
 Visualization: To represent
 successes, motivation of the
 employees
Work Culture

• How we do things around here.
• How everyone responds to a crisis.
• How problems are seen and resolved.
• What is done when no one is looking; core attitude and behavior.
• Etc.
Objectives: Develop People
Develop Self-Learning Work Cultures

Global Responsibility for Human Survival

From: Directive Bureaucratic Control

To: Every job a learning position. Every task an integration point.

Innovation: Revolutionary Change

Process Improvement: Refine, Eliminate NVA

Work Culture
Quality Growth

Increase Value Added to all stakeholders.

From cost reduction in production or service processes to Process thinking. Process thinking is a different way to see what a business is and what its objectives are.
Kaizen Integration of Activity

- No “answers;” no end state. Conditions are ever changing. Everyone must think all the time.
- Not a single-brain activity; detail is impossible to capture in a single brain or IT system.
- Simplify the complexity; “layered processes” self-integrate into a whole.
- Depends on long-term development of people.

Process thinkers learn fast and don’t regress
Process Thinking (Lean Thinking)

- Business thinking: buy and sell by valuing objects, or services regarded as objects.
- But all things (products) have a process history.
- Processes are how value is created in things. Think relationships & causality.
- Process improvement eliminates NVA and attempts to increase VA.
Accounting vs. Process Thinking

• Financial accounting attempts to “give a snapshot” despite time variance in cash flows. It struggles with complexity, and with the fact that it is mostly from the ownership view.

• Process improvement decades ago gave way to standard cost accounting – performance to plan.

• Initial inventory reduction yields a big under-absorption of overhead.

• Lean accounting. Look at cash flow and the changes in working capital.
• GK Success stories
Kanban Signaling: *MRP vs. Kanban*

**Push vs. Pull**

- **Manufacturing**
- **Customer**

![Diagram showing the concept of Push vs. Pull in Kanban signaling]
Eliminating Waste

Eliminate Non Value Added activities

Suppliers

Value Chain

Consumers

Reduce Lead Time

✅ Higher flexibility
✅ Less stocks
✅ Better service
✅ Reduced Complexity
✅ Less cost
✅ Improved Freshness
SIMPLY STATED-AM STEP 1

- Each operator is responsible for His Own Equipment

I RUN IT, YOU FIX IT

I RUN IT, I FIX IT
Where Maintenance Dept comes in..

- Equipment Condition
- Time

- Natural Deterioration
- Planned Maintenance
- Forced Deterioration
- Autonomous maintenance
Benefits of Kaizen

• **Teamwork**
  – Everyone is able to participate and make improvements in teams.

• **Communication**
  – Improved relations between employees, associates, management and all stakeholders

• **Education**
  – Improved problem solving

• **Awareness**
  – Understanding of broad issues and objectives of the organization as a whole & better understanding of Continual Improvement and the challenges involved with Change

• **Confidence**
  – Stronger feelings of self-worth

• **Empowerment**
  – Increased control over the job and work environment which fosters ownership and commitment to the change process
“Failure to change is a vice.”
Hiroshi Okuda (Chairman Toyota.)

“UNLESS YOU CHANGE THE PROCESS, WHY WOULD YOU EXPECT THE RESULTS TO CHANGE?”
The President of Texas Instruments Defense Systems and Electronic Group

“THE STARTING POINT FOR IMPROVEMENT IS TO RECOGNIZE THE NEED. THIS COMES FROM RECOGNITION OF A PROBLEM. IF NO PROBLEM IS RECOGNIZED, THERE IS NO RECOGNITION OF THE NEED FOR IMPROVEMENT. COMPLACENCY IS THE ARCH-ENEMY OF KAIZEN. THEREFORE, KAIZEN EMPHASIZES PROBLEM-AWARENESS AND PROVIDES CLUES FOR IDENTIFYING PROBLEMS.”
Masaaki Imai
The Difference Between Knowing Something And Success Lies In Doing!!

Remember Kaizen is all about Team Work!!

Kaizen: learn by doing