

MABATI ROLLING MILLS LTD

GEMBA KAIZEN DISCUSSION

THE 29TH ICPAK ANNUAL SEMINAR
Investment Realities, Opportunities and Challenges
29th -31st May 2013
Sai Rock Hotel, Mombasa

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&

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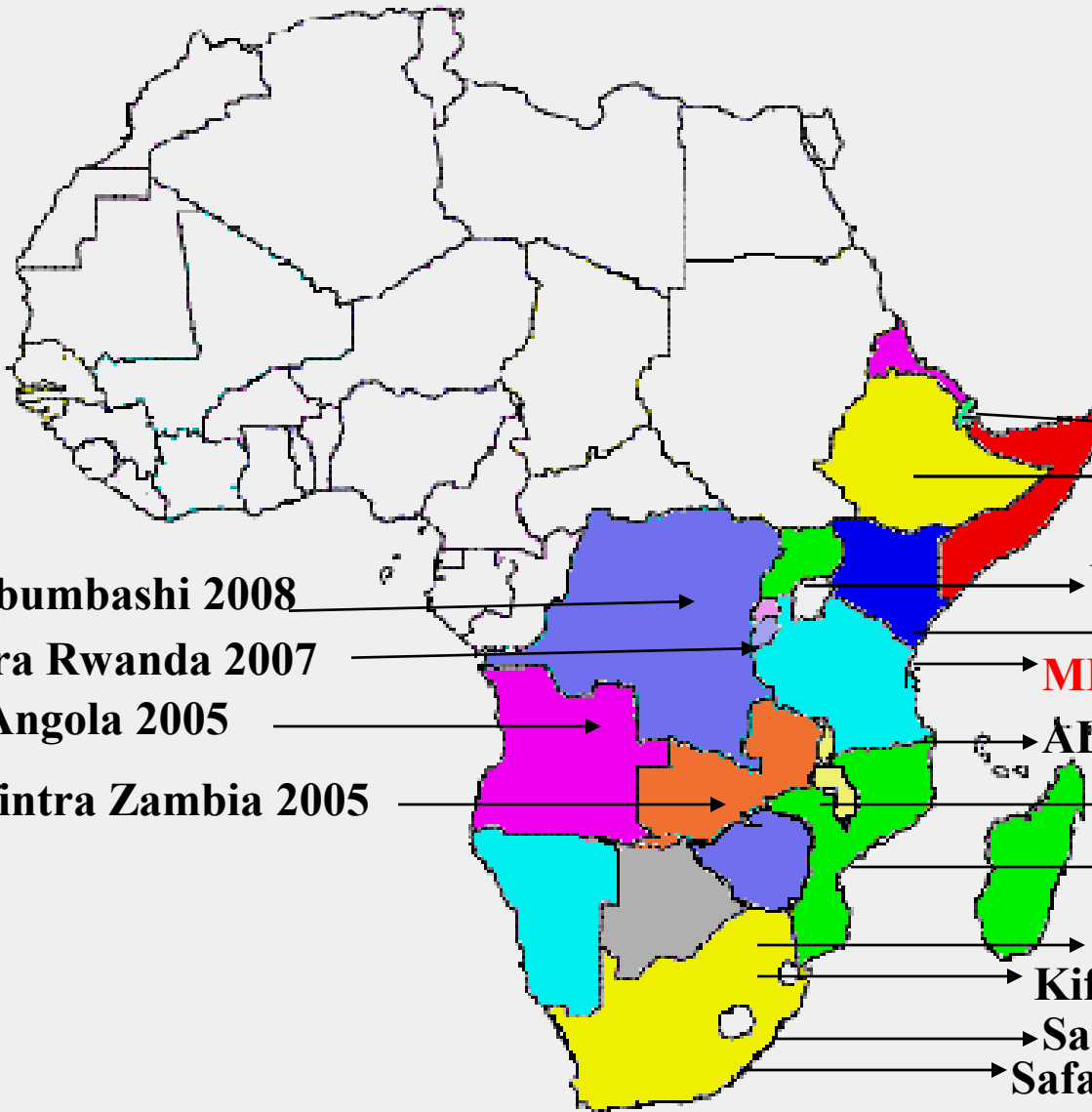


CONTENT

- What is Gemba Kaizen
- Why Gemba Kaizen
- The Gemba Kaizen Principles
- Application of Gemba Kaizen
- Gemba Kaizen Implementation Challenges
- Success stories

ABOUT MRM

THE PAN-AFRICAN GROUP – SAFAL HAS A PRESENCE ACROSS AFRICA



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



GROUP

Safintra Lubumbashi 2008

Safintra Rwanda 2007

Safintra Angola 2005

Safintra Zambia 2005



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



Pure Clean Life.



more colours, more life.



More Mabati Than Mabati



more than just a tile
SHFH GROUP



KEY PROCESSES

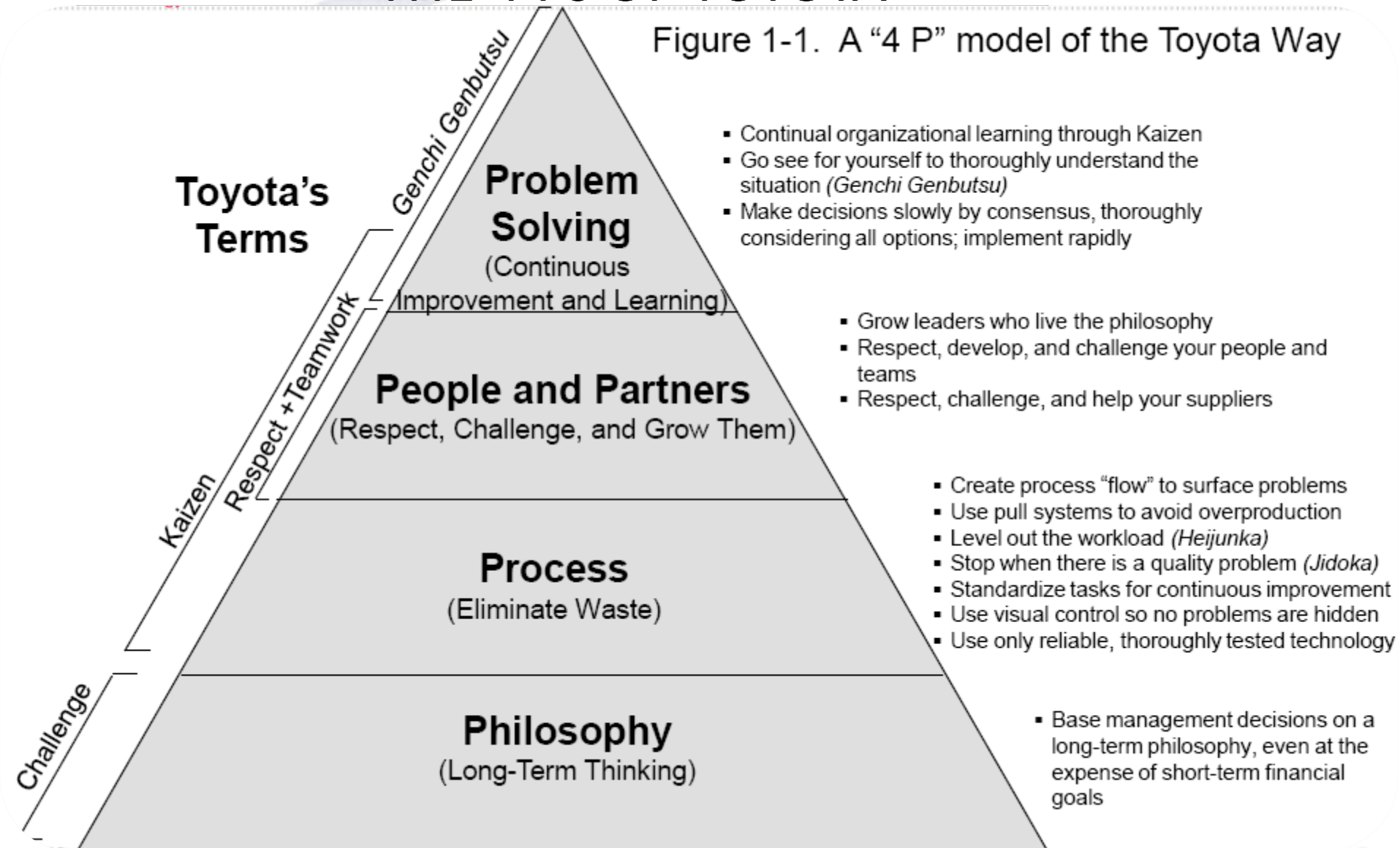


Integrated with ERP-SAP



THE 4 Ps OF TOYOTA

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



Our belief

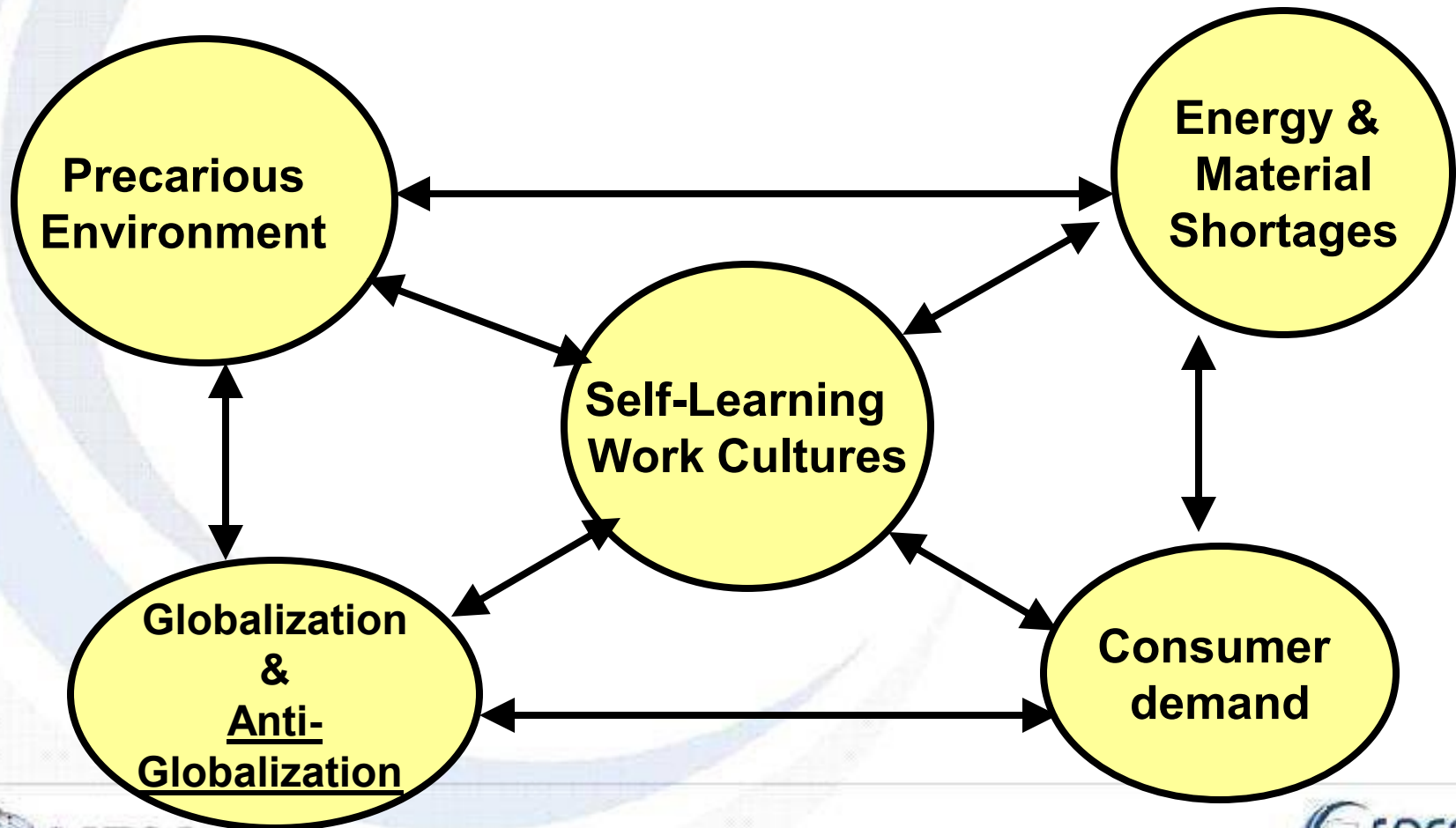


That people are the drivers of success, technology is only an enabler



- **NEED FOR CHANGE : Why GK**

Business Challenges



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.)

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

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

- What is GK

KAIZEN (Definition)

改

KAI

Change

善

ZEN

Good
(for the better)

改善

**KAIZEN = Continual
Improvement**

of all aspects of an organization at all levels all
the time, forever.



MASAKI IMAI



KAIZEN HISTORY

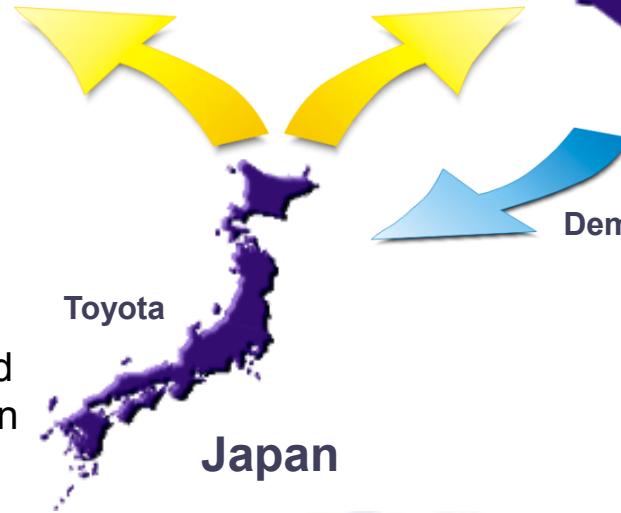
e) Key tool in Lean Production today

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,

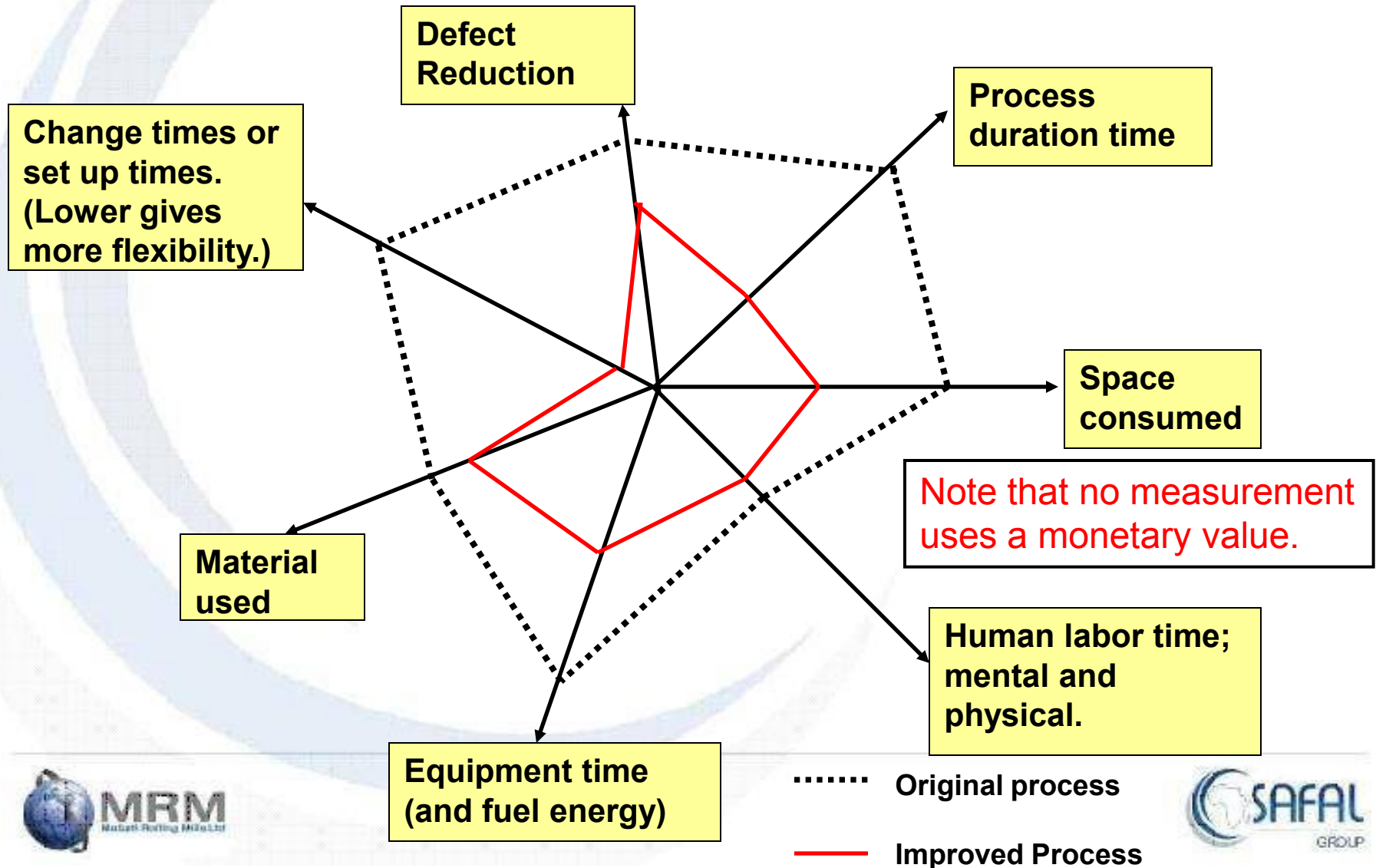
KAIZEN PHILOSOPHY

*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





- 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 **S**trategically Important Areas
- **S**ignificant (Large) Improvements
(and small ones that go with it)
- **S**ustainable Improvements
- **S**peedily Executed Improvements

Focused Improvement.

Improvement is different from Focused Improvement

Improvement

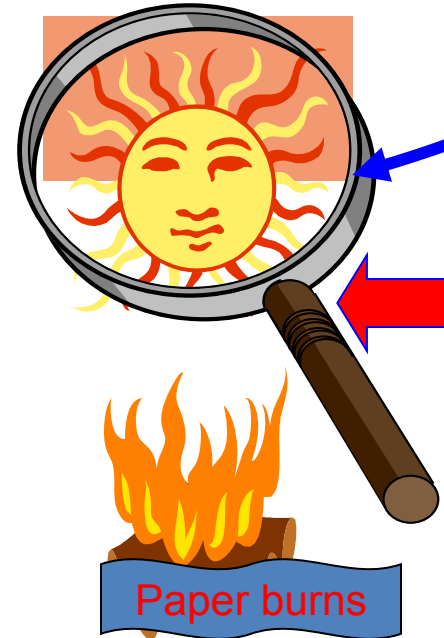


Paper does **not** burn in sunlight

Improvement is like sunlight:

- Lot of energy, but dispersed (wasted)
- Small improvements
- Slow progress.

Focused Improvement



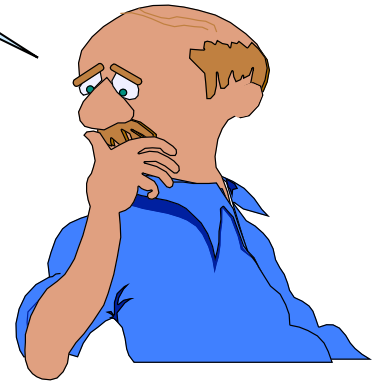
Focusing the lens concentrates the energy form the sun:

- Little energy, but concentrated and aligned
- Enables significant (large) improvements
- Small time required
- Rapid progress

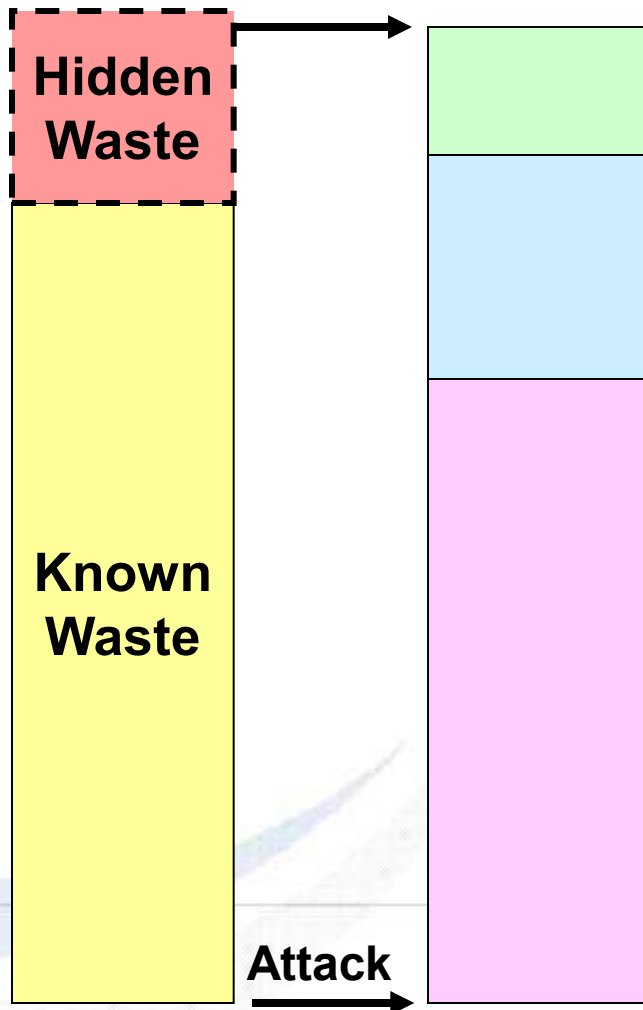
Isn't KAIZEN supposed to be *small improvements*?

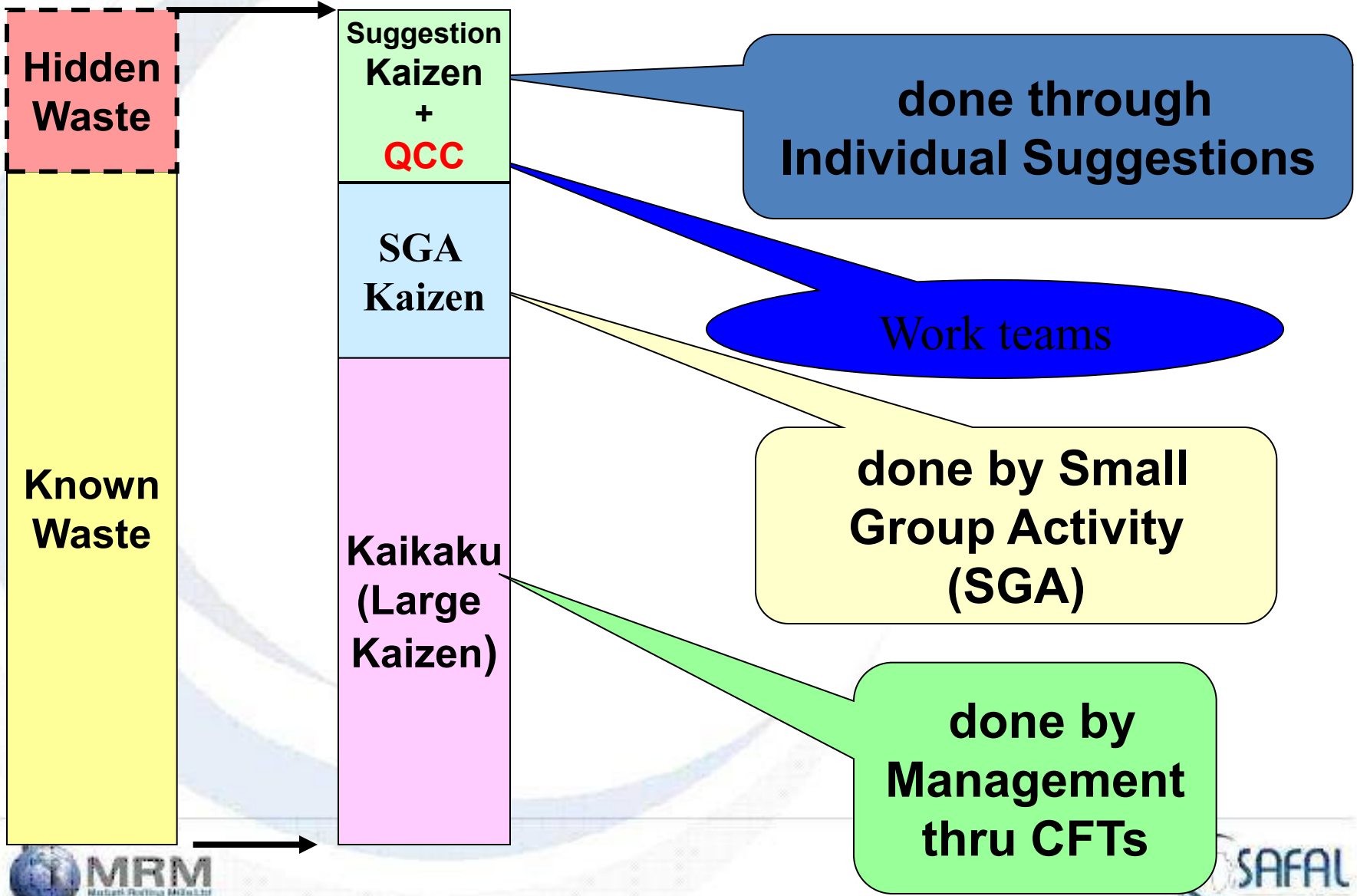
Kaizen is successive *small changes* that leads to Large Improvement

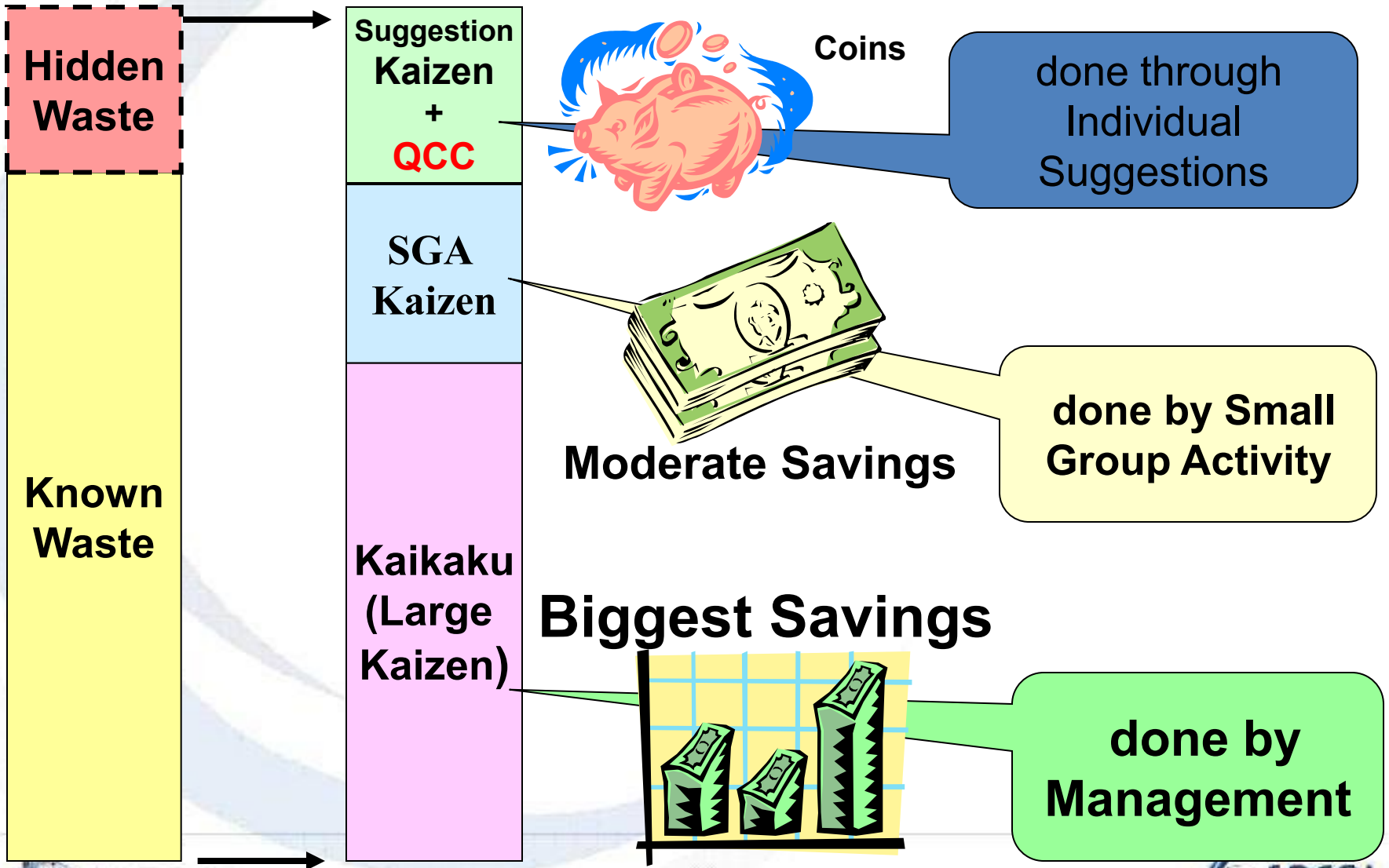
Succession of small changes (steps) that result in large improvement



KAIZEN Comes in Three Types







GEMBA (workplace)

GEM + BA
means means
Real + Place

GEMBA is where:

- WORK IS DONE
- VALUE IS CREATED
- PROBLEM – SOLVING HAPPENS



Essence of KAIZEN® Philosophy

Kaizen

Muda

Activity = Useful Work + Wasteful Work

Expenditure = Cost + Waste

Essence of KAIZEN® Philosophy

Kaizen

Muda

Activity = Useful Work + Wasteful Work

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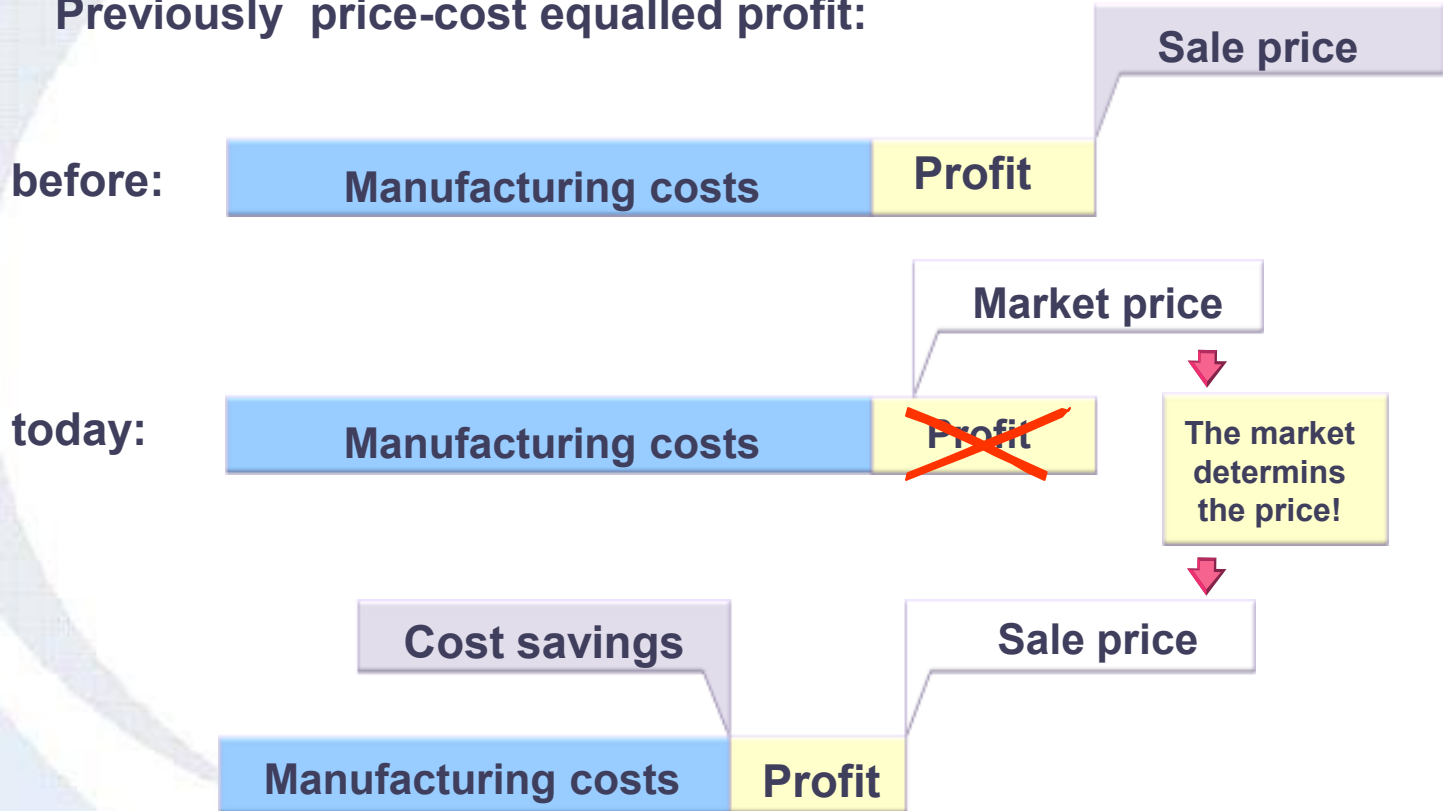
Don't attack; it is useful

Attack first

Techies keep attacking this

The Market determines the Price

Previously price-cost equalled profit:



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

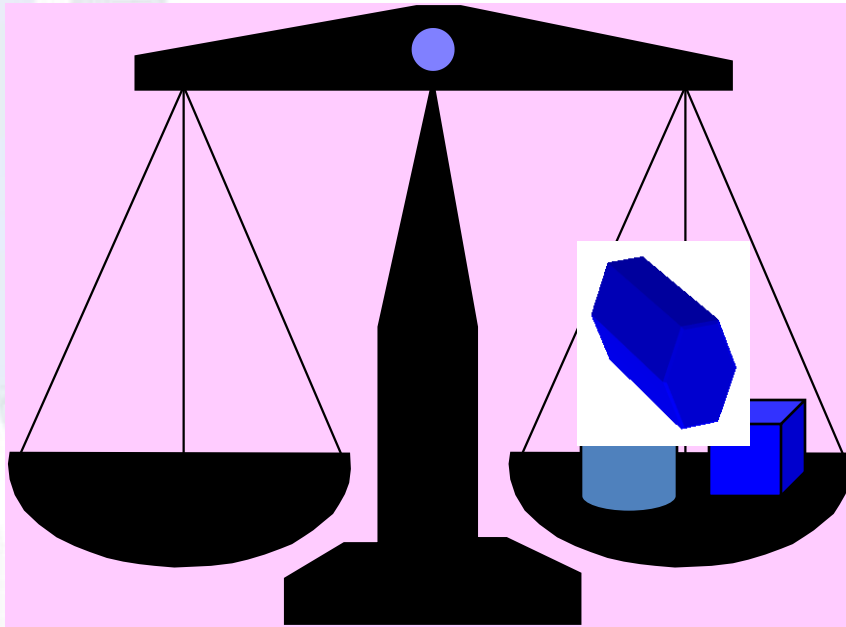
The 3 MUs

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

7 (+1) Types of Muda In Bussiness

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

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)

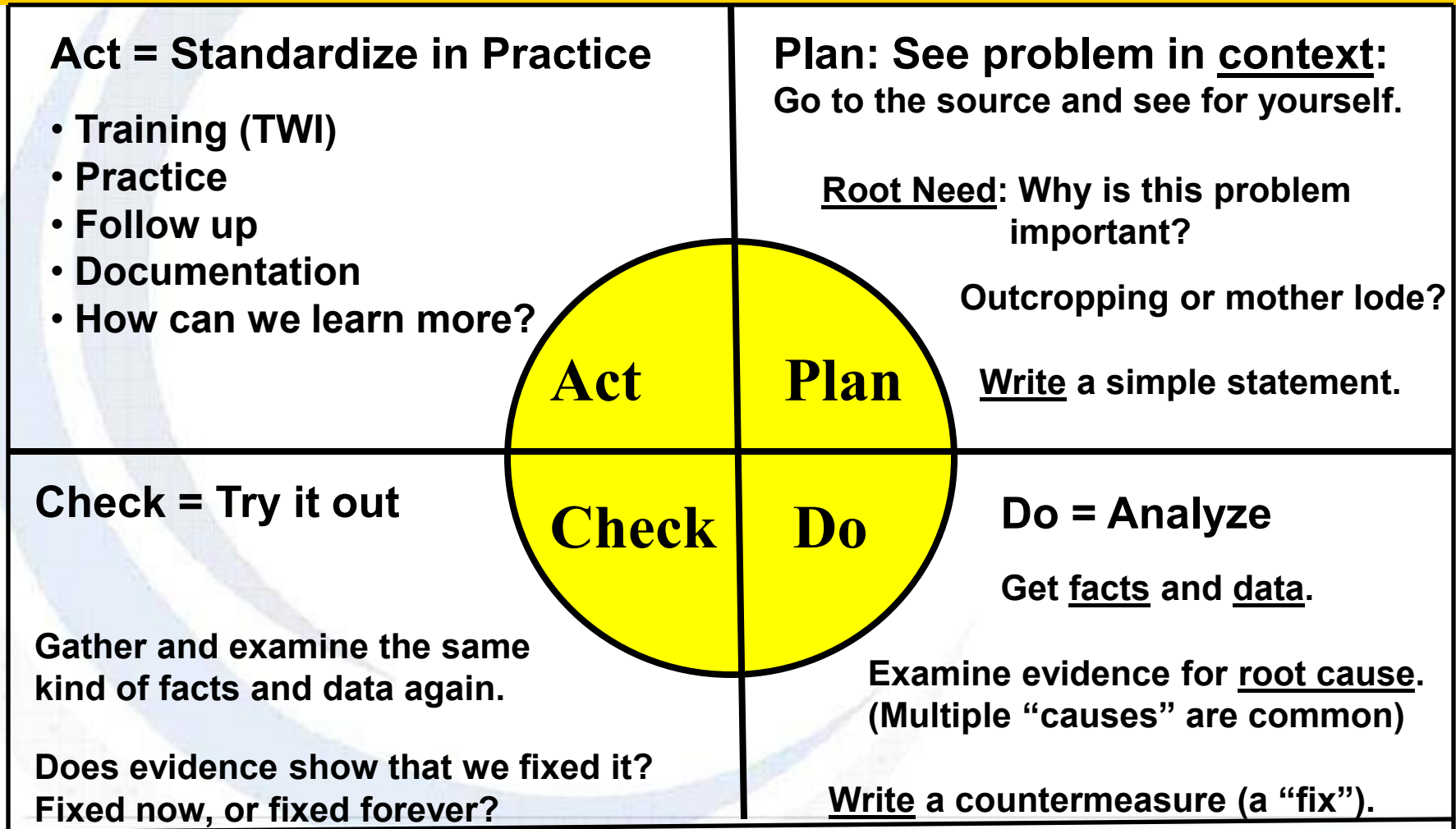
The Gemba Kaizen Principles

- | | |
|------------------------|---|
| Go to Gemba | - When an abnormality occurs |
| Check Gembutsu | - Machine, Material, Failures, Rejects etc. |
| Search for | - Muda (waste), Mura (inconsistency), Muri (physical strain) |
| Speak with data | - Take temporary countermeasures on the spot |
| Make /Do KAIZEN | - Remove root causes |
| Standardize | - Standardize to prevent recurrence |

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**

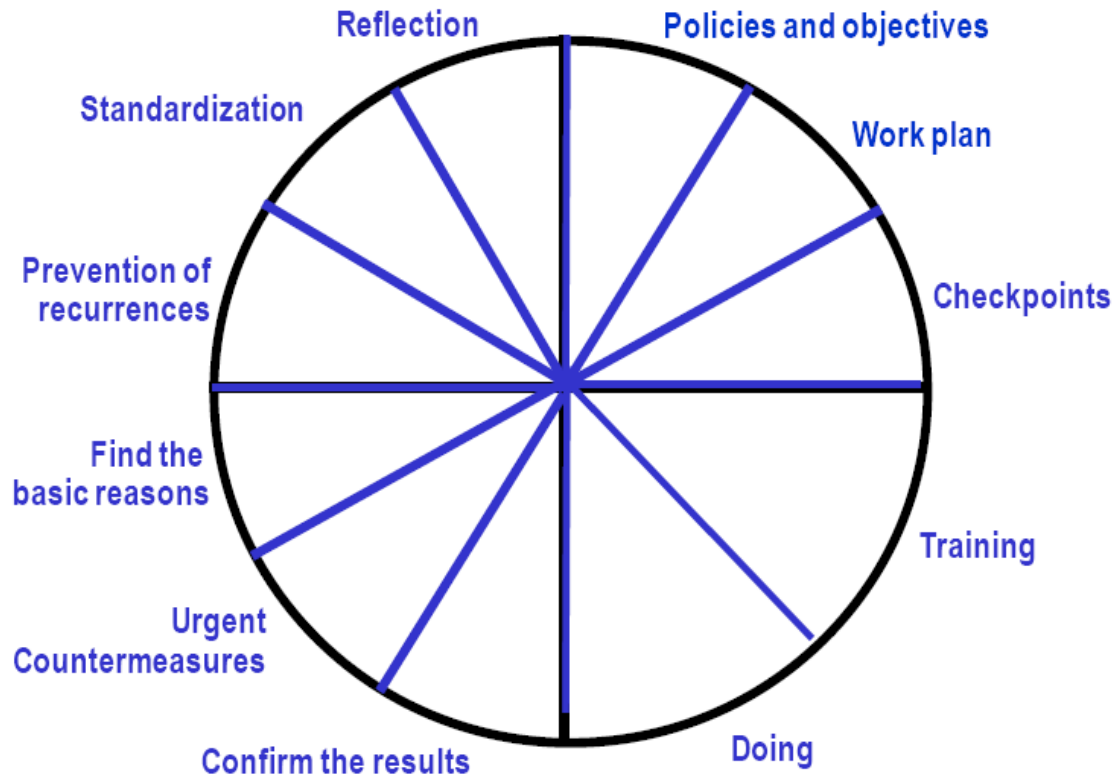
Rigorous Version of 5 Whys: Deming Circle



THE PDCA CYCLE

Act

Plan



Check

Do

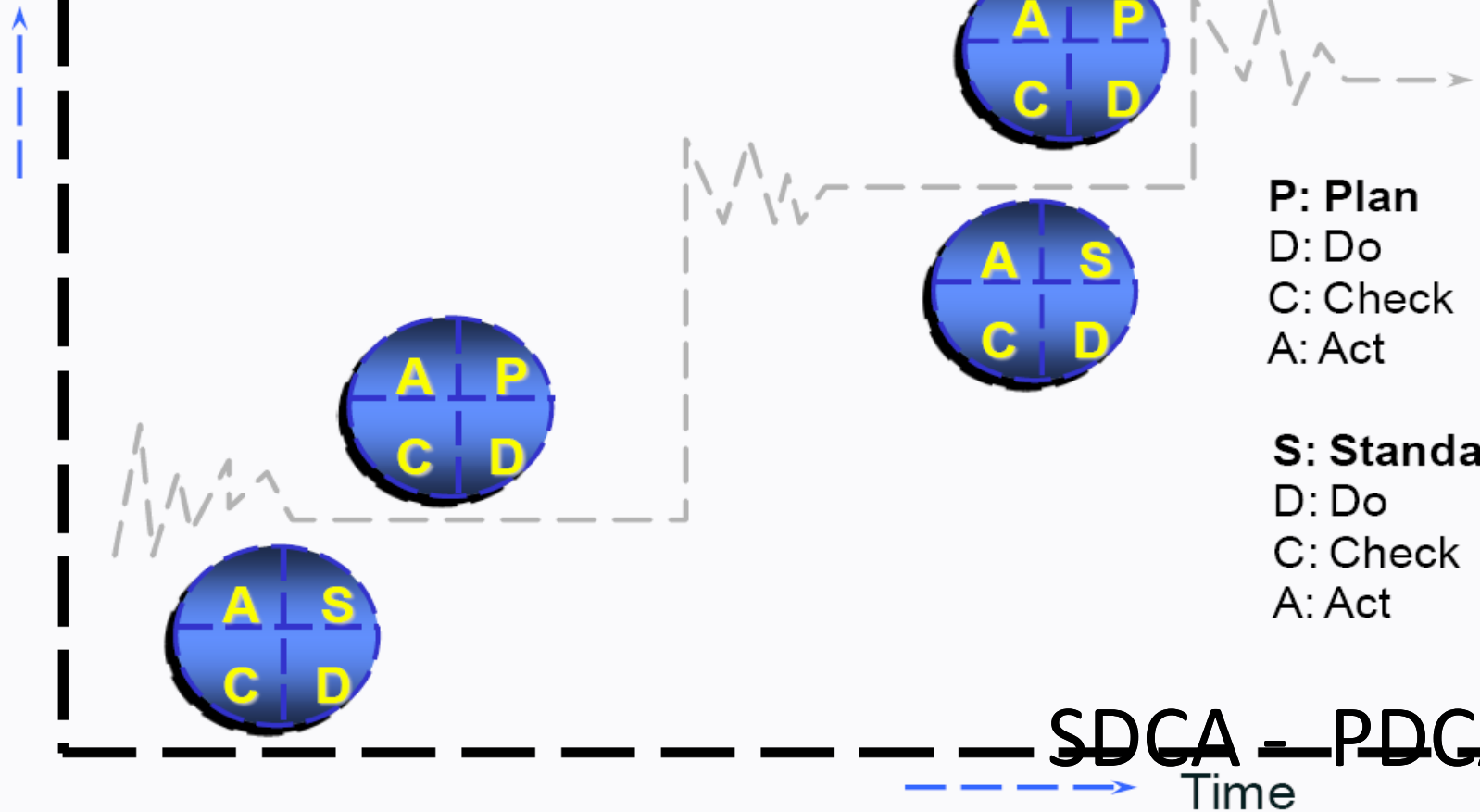
WWWWHH: What ? Who ? Where ? When ? Why ? How ? How many ?

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

Improvement



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

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

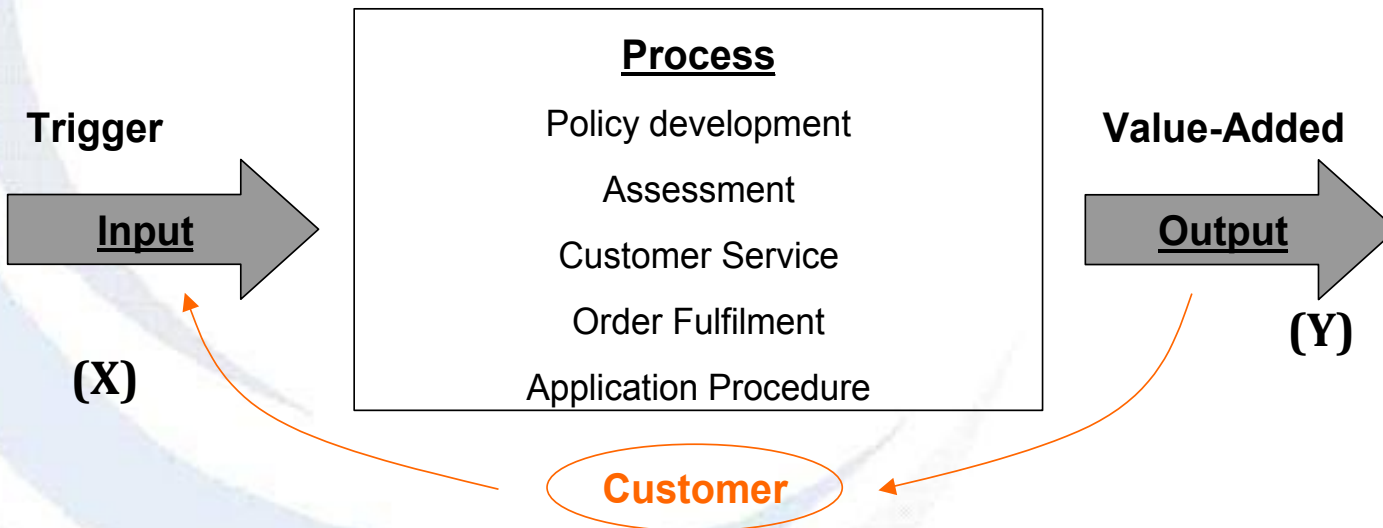
~~SDCA~~ - ~~PDCA~~

Improve what you maintain , Maintain what you improve

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

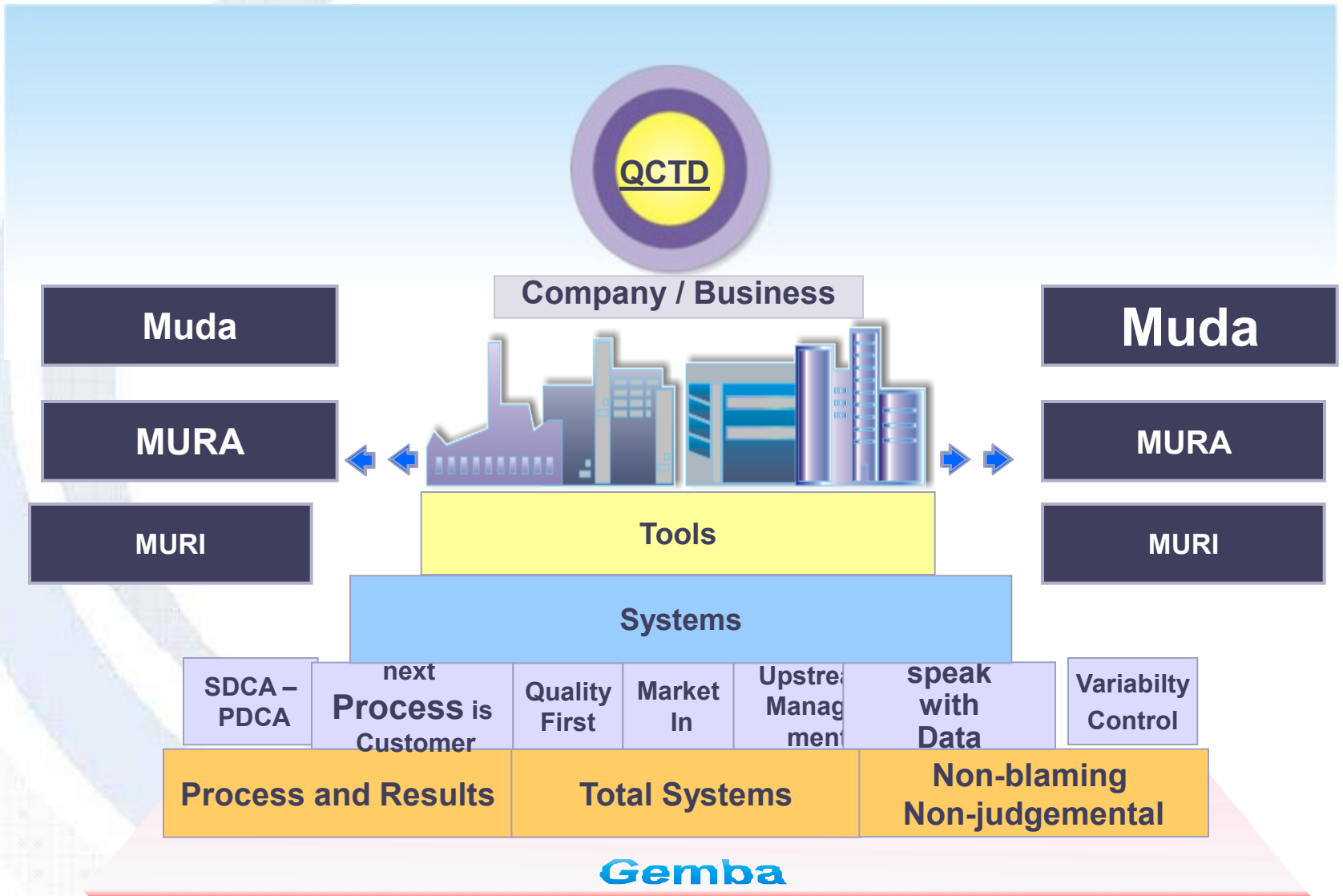
- Dependent
- Output
- **Effect**
- Symptom
- Monitor
- Response

$$Y = f(X)$$

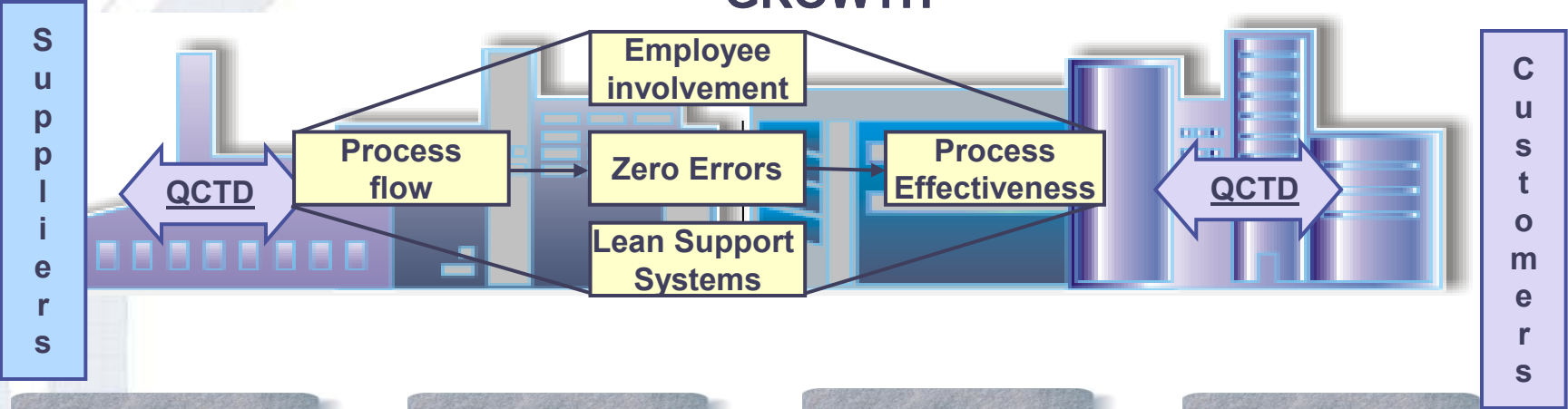
- X1 . . . XN
- Independent
- Input-Process
- **Cause**
- Problem
- Control

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

KAIZEN Concepts



KAIZEN-MANAGEMENT-SYSTEM FOR SUSTAINABLE PROFIT AND GROWTH



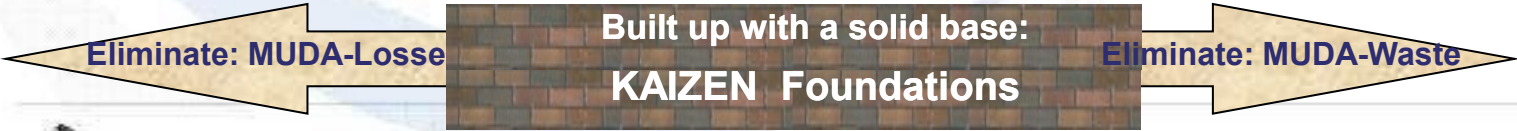
TFM
Total Flow
Management

TPM
Total Productive
Maintenance

TQC
Total Quality
Control

TSM
Total Service
Management

TCM – Total Change Management



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

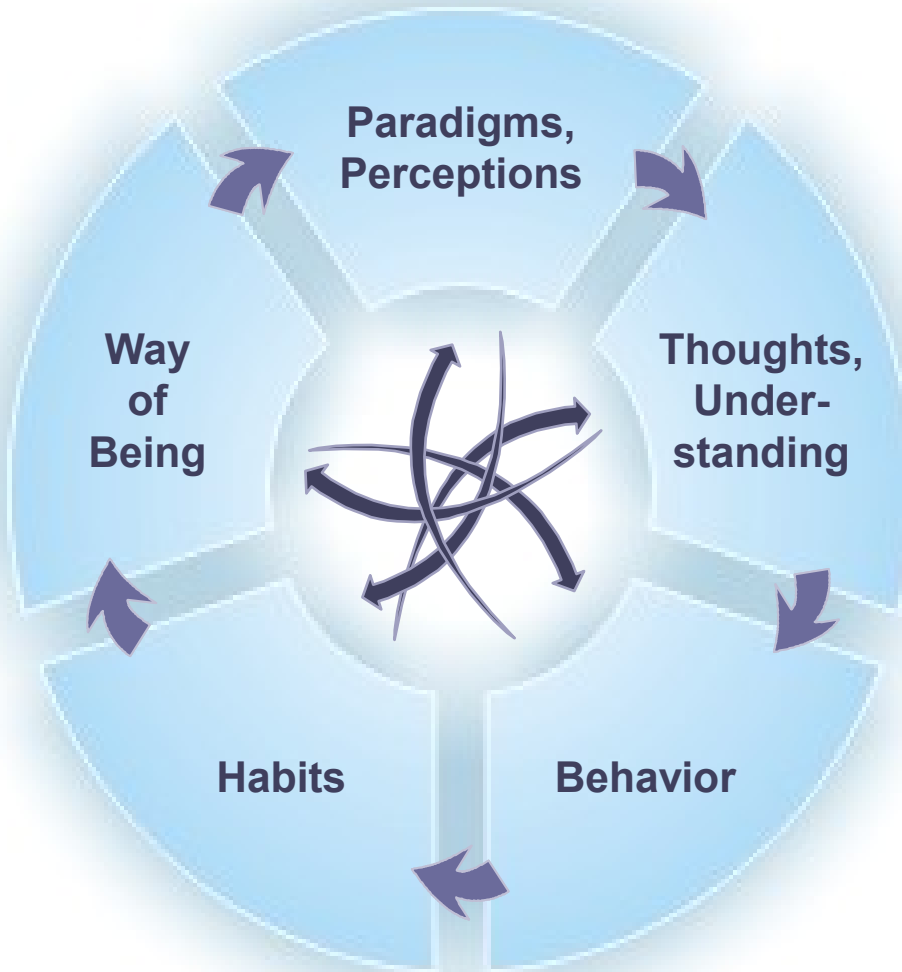
When does it become KAIZEN?

- 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



“Learning Organizations”

Process learning continuum:

From exceedingly-detailed incremental improvement to drastic, revolutionary innovation.

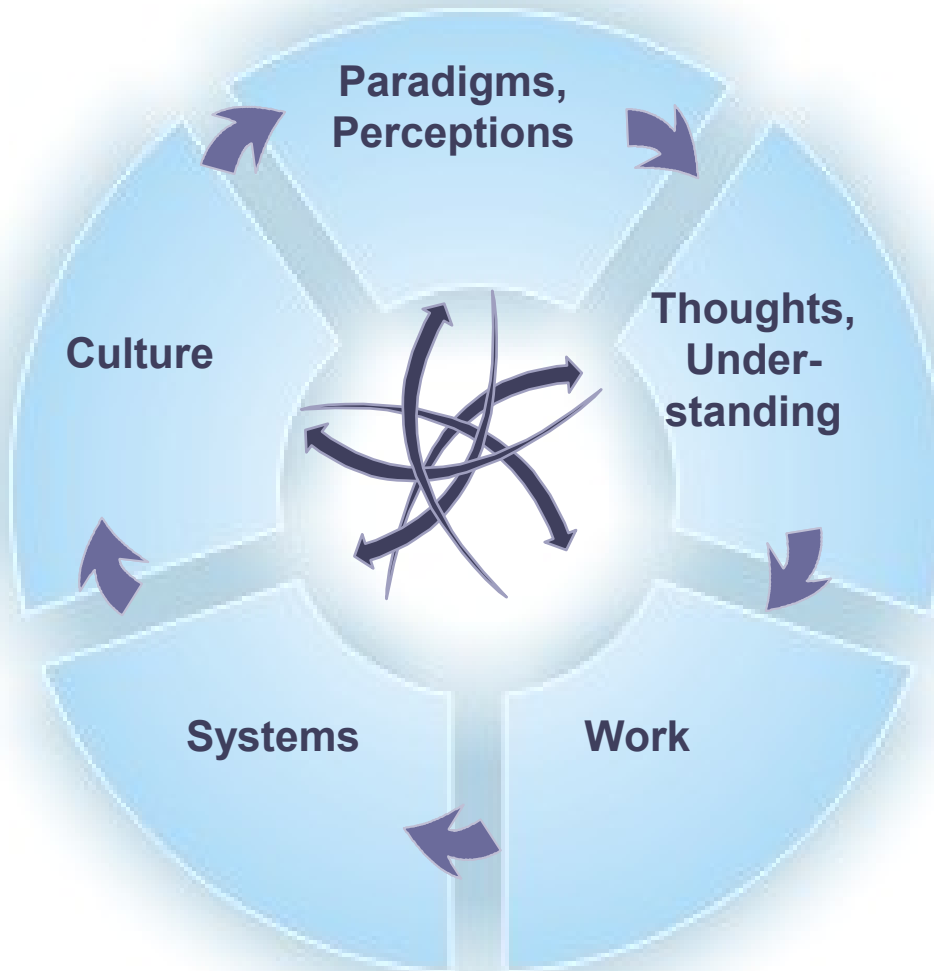
Human learning continuum:

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



Self-Improving Company

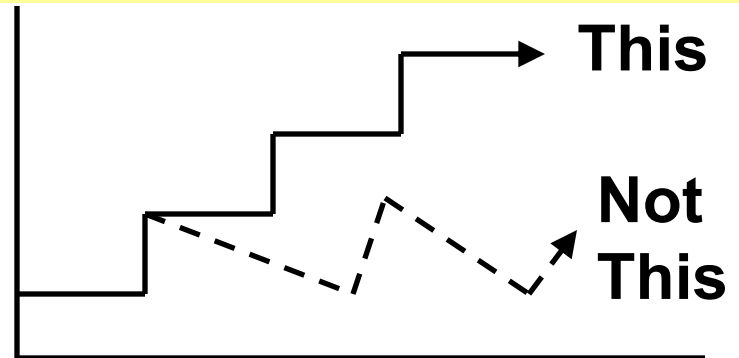
Changing an entire organization, in all areas, is a much bigger challenge than improving flow in operations areas.

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

**KAIZEN PROMOTION
OFFICE**

Systems

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

**Work
Culture**

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

**Innovation:
Revolutionary Change**

**Process Improvement:
Refine, Eliminate NVA**

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.

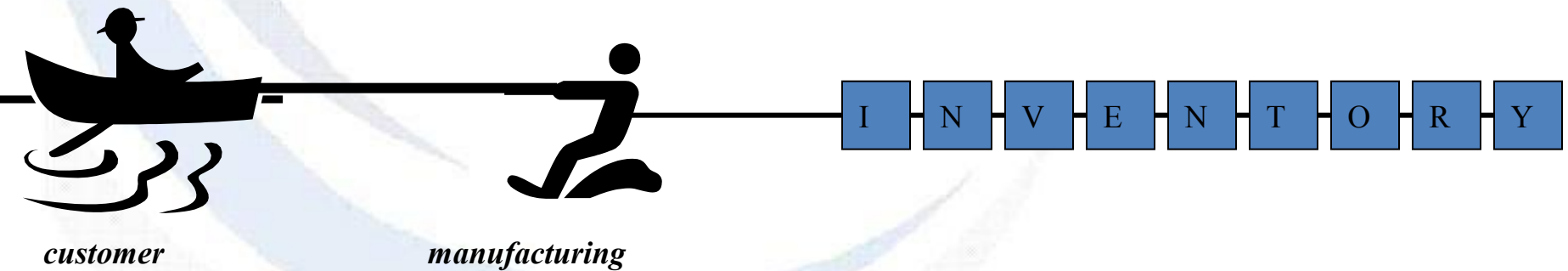
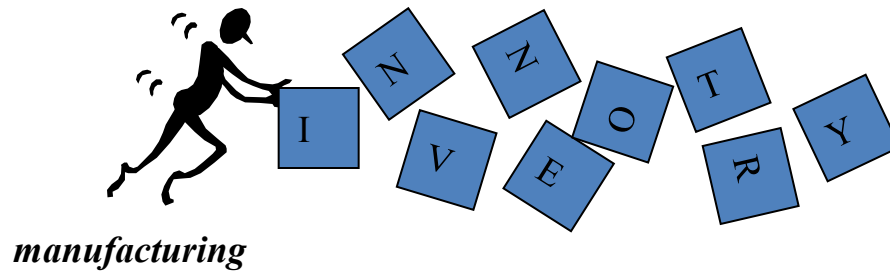
Accounting vs. Process Thinking

- 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

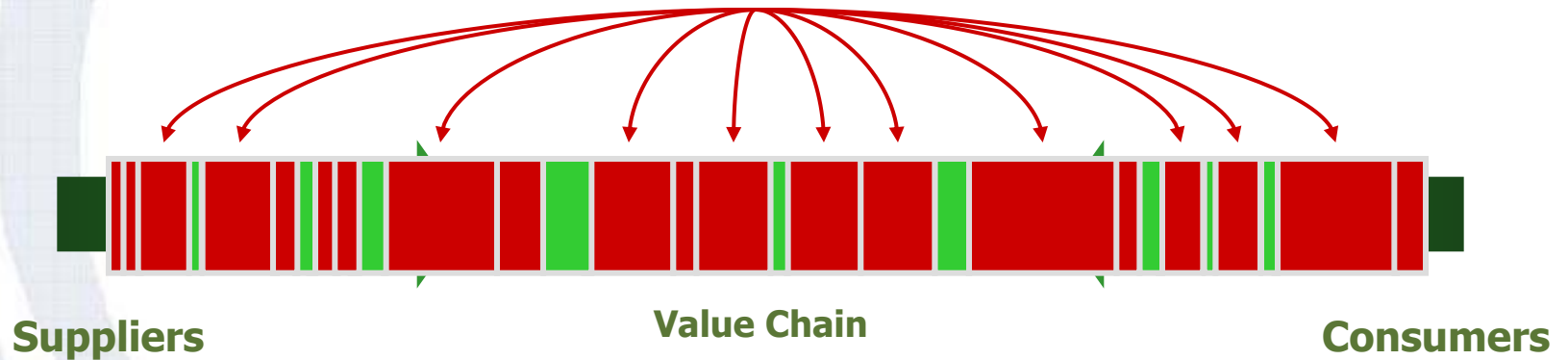
Kanban Signaling: *MRP* vs. *Kanban*

Push vs. Pull



Eliminating Waste

Eliminate **Non Value Added** activities



Reduce Lead Time

✓ Higher flexibility

✓ Less stocks

✓ Better service

✓ Reduced Complexity

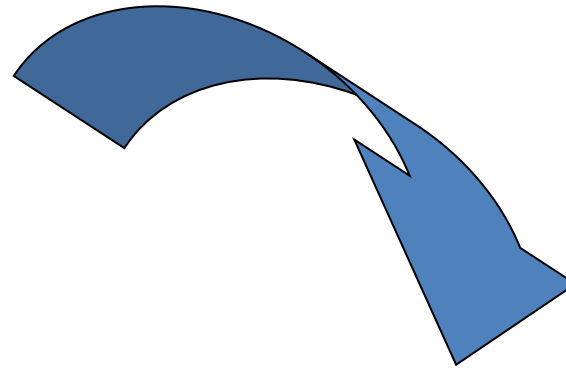
✓ Less cost

✓ Improved Freshness

SIMPLY STATED-AM STEP 1

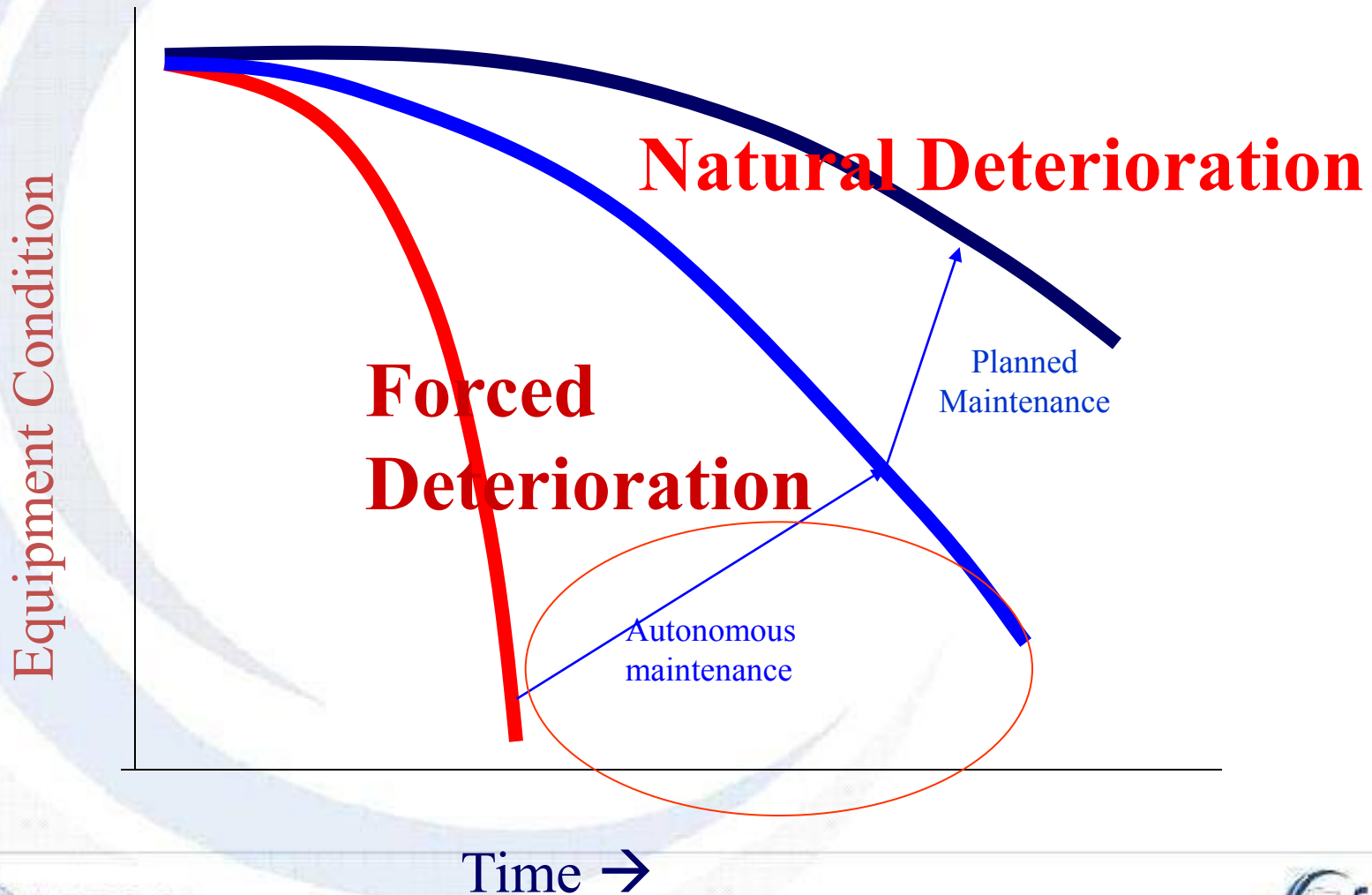
- Each operator is responsible for His Own Equipment

I RUN IT, YOU
FIX IT



I RUN IT, I FIX IT

Where Maintenance Dept comes in ..



Benefits of Kaizen

- **Teamwork**
 - Everyone is able to participate and make improvements in teams.
- **Communication**
 - Improved relations between employees, associates , management and all stake holders
- **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

The Gurus Corner

“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

Kaizen: learn by doing

The **Difference** Between
Knowing Something
And
Success
Lies In
Doing !!

Remember
Kaizen is all about
Team Work !!